

MISSING  
MEN OF  
SATURN

LATHAM

# *Missing Men of Saturn*

By PHILIP  
LATHAM



WINSTON A SCIENCE FICTION NOVEL

# Missing Men of Saturn

BY PHILIP LATHAM

Jacket Illustration by Alex Schomburg

WE GO ANYWHERE" was the legend scrawled on the battered hull of the *Albatross*, one of the worst old tubs in space. To Dale Sutton, the biggest man on campus at the Space Academy, it was a slap in the face to be ordered to such a cruise. But his biggest shock came when orders set the *Albatross* and its two companion ships on a course that led straight to the dreaded planet Saturn. No one had ever come back from Saturn, yet everyone knew the story of Captain Dearborn who had led the first and only expedition to the ringed planet a century earlier. His diary was the record of a steadily losing battle against the unknown as one by one, the little party had vanished.

Now, a hundred years later, the superstitious crew of the *Albatross* found it impossible to rid themselves of the feeling that the same catastrophe that had wiped out the previous expedition would strike again. They had hardly been settled a day in Dearborn's old underground quarters on Titan, Saturn's largest satellite, when their quavering fears began to materialize. First, the loss of all their guns when the lights suddenly and inexplicably faded, then the disappearance of the first man! But greater and more deadly horrors were yet to come: panicked moments of groping through ghostly underground caves, the appearance of a face bearing the same twisted features of the illustrious Captain Dearborn, a collision that sends Titan up in a blaze of destruction, and the final landing on Saturn, a planet heaving with volcanoes and covered with streams of molten lava.

Philip Latham's portrayal of life on a planet about whose conditions few have ventured a guess is a tale guaranteed to make the reader as numb with terror as the men the author writes about.

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## The Author

PHILIP LATHAM can support the suppositions that are the basis of his science fiction novels with accepted scientific theories. For he is an author who is in the business of "watching the stars." An astronomer at Mount Wilson and Palomar Observatories since 1931, he started writing for magazines in the early forties. His work drew such wide respect that he now has a college textbook on astronomy to his credit. He has given technical assistance to a number of studios on films such as *Destination Moon* and has written an article describing the work on the science fiction thriller *When Worlds Collide*. *Five Against Venus*, Mr. Latham's first novel for the Winston Science Fiction series, won him a teen-age following that *Missing Men of Saturn* is sure to double.

## The Editors

CECILE MATSCHAT, editor of the Winston Science Fiction Series, is recognized as one of this country's most skillful writers and editors. She has sixteen books to her credit, including the highly praised *Suwannee River* in the "Rivers of America" series. Nationally known as a lecturer, an artist of great ability, Cecile Matschat is also an expert historian. With this varied background, she is perfectly suited to select top science fiction authors and books to make this a balanced and well-rounded series.

CARR CARMER, consulting editor, holds an outstanding position in the literary world. Author of *Stars Fell on Alabama*, he now edits the popular "Rivers of America" Series. Other of his books are *Genesee Fever*, *For the Rights of Man*, *Listen for a Lonesome Drum*, and *Windfall Fiddle*.

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**By Philip Latham**

**Jacket and Endpaper Designs  
by  
Alex Schomburg**



**Cecile Matschat, Editor  
Carl Carmer, Consulting Editor**

**THE JOHN C. WINSTON COMPANY**

**Philadelphia • Toronto**

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*To My Mother*

# Contents

CHAPTER	PAGE
1. <i>The Secret of Success</i> . . . . .	1
2. <i>Setback</i> . . . . .	13
3. <i>Mission to Nowhere</i> . . . . .	23
4. <i>Opposition</i> . . . . .	35
5. <i>The Anomaly</i> . . . . .	47
6. <i>To Saturn</i> . . . . .	58
7. <i>Camp Dearborn</i> . . . . .	70
8. <i>In the Dark</i> . . . . .	76
9. <i>The Intruders</i> . . . . .	88
10. <i>Disappearance</i> . . . . .	100
11. <i>The Fight</i> . . . . .	111
12. <i>The Face of Dearborn</i> . . . . .	120
13. <i>Into Saturn</i> . . . . .	135
14. <i>Under the Cloud Belts</i> . . . . .	145
15. <i>Fleming Goes</i> . . . . .	156
16. <i>Inside Saturn</i> . . . . .	163
17. <i>Before the Council</i> . . . . .	171
18. <i>The Invaders</i> . . . . .	180
19. <i>The Arms</i> . . . . .	192
20. <i>Escape</i> . . . . .	201
<i>Backstage on Saturn</i> . . . . .	209

## *Chapter 1* The Secret of Success

**T**IME!" Dale Sutton sauntered to the center of the ring, nonchalantly touched gloves with his opponent. It was the last round. Time he gave this upstart a boxing lesson. He was aware of the cadets clustered around the ropes, their eyes following him expectantly. It wasn't every day they had a chance to see the welterweight champion of the Terrestro Space Academy in action. He liked an audience. Being the center of attention did something to him. It excited him. Put him on his toes. Although after four years it was becoming a bit tiresome.

The youngster was dancing about looking for an opening. All right, he'd give him one. Dale deliberately dropped his guard, leaving his chin wide open. The youngster took the bait. Came lunging at him with his left.

Dale stepped in close. He sent in a short right hook to the body. A quick left to the jaw. Then another hook to the body. He heard the boy gasp. Felt him sag as he slipped to the canvas. The blows were harder than he had intended. After all they were only sparring. Oh, well, what difference did it make? This kid wasn't anybody.

There was a shout from the crowd as the boy sprawled on his knees.

"Did you see that?"

"Sure was a good one!"

"Dale was just playing with him."

Dale helped the youngster to his feet.

"Sorry," he said. "Didn't mean to let those punches go so hard."

The youngster grinned. "That's all right."

"Breathe deep," Dale advised. "You'll be over it in a minute."

The youngster took a deep breath. The color was creeping back into his face. There was a murmur of appreciation from the crowd. They liked to see you be magnanimous to a fallen foe.

"Keep your elbows in closer to your body," Dale cautioned. "You've got a bad habit of holding your right elbow high when you lead with your left."

"I do it all the time. I can't seem to remember."

Dale patted him on the back.

"You'll learn. I had a lot to learn, too."

He threw a towel around his shoulders and slipped through the ropes. The cadets made way for him respectfully. A couple of them called him by name. Dale responded with a casual nod. There were always fellows like that around trying to scrape an acquaintance. You couldn't ignore them or they'd say you had the bighead.

Oh, well, he was through with school now. Graduation was next week. Then he'd be out of the Academy and into deep space at last. No more of those little training trips to the moon. He was so tired of that base on the *Mare Imbrium*. It was hard to realize what a thrill that had been once. He remembered the first time he had seen the sun rising over the rim of Pluto. The slant rays sent shadows sprawling over the surface like long fingers reaching among the cracks and fissures that scarred the crater floor. There was a fascination about those shadows. They were always

the same yet never quite the same. Some men went crazy following those shadows. Well, he never let things like that bother him. There was only one thing bothering him now.

"Did you hear about Jim Allen?"

The speaker was a smiling, fat-faced cadet named Perkins. He was a member of the Perseids and Dale, as president of that exclusive organization, was compelled to notice him. Though how anyone with no more background than Perkins had ever made the Perseids would forever remain a mystery to him.

"What about Allen?" Dale mumbled, pulling off his sweat shirt.

"He's been called to Central City already. I was there when he got his mail. A long gray envelope with a big seal in the corner. They say he can have his pick of a dozen jobs. Might even get on the *Albireo*."

The *Albireo*! Why that was the government's newest spaceliner. He had wanted a place on the *Albireo* himself. He must rank well above Allen in the class.

Dale tossed his shoes in the locker and reached for a fresh towel.

"I'm mighty glad to hear that, Perkins. Allen has worked hard. I was afraid he wasn't going to make it in math for awhile."

Perkins chubby face was blank. "Honest?"

"Yeah. Math was always hard for Allen. I spent a lot of time coaching him."

"I didn't know that."

Dale smiled gently. "Naturally we didn't broadcast it."

Perkins regarded him with dumb admiration.

"Gee, Dale, you sure ought to get something good.

You get straight A's in everything. You're president of the Perseids and captain of the boxing team."

Dale shrugged. "I'll take whatever the powers at Central City choose to give me. The service comes first. That's what we're here for, you know. To advance the service in the conquest of space."

Perkins grinned broadly.

"I've heard that before. A man's got to look out for himself."

"Don't think so, Perkins. In my opinion that's the way *not* to get ahead. The harder you push the harder people push back. Make 'em come to you is my motto."

"It's all right for you to talk. Things come easy for you."

"Oh, I don't know . . ."

Dale shut his locker door.

"Well, that's great news about Allen. Give him my best."

He started for the showers, anxious to be rid of Perkins but the cadet stuck to his heels like a toy spaniel.

"Dale."

"Well?"

"I know I shouldn't ask but—have you heard from Central City yet?"

Dale waited a proper interval before replying.

"To tell the truth I don't know. Haven't gone for my mail yet. In fact, I really hadn't thought much about it."

"Gosh, I can't think about anything else. The time's getting so short."

"The trouble with you, Perkins, is that you try too

hard. Take it easy. Relax. You'd be surprised what a difference it makes."

Perkins looked doubtful. "It would never work for a guy like me."

"Look here," said Dale, in a burst of confidence, "I'll give you a demonstration. I swear I haven't gotten my mail yet. But I feel absolutely sure there's a letter from Central City waiting for me."

"But how can you know?"

"That's it—I don't know. I just *feel* it. You want to go ahead as if you felt sure you couldn't fail. That's the whole secret of my success in a nutshell."

Perkins stared at him with his bulging eyes while he pondered upon the secret of success.

"Gee, Dale, I'm going to the clubhouse now. Maybe it'll work for me."

He hurried out of the gym. Dale chuckled as he strolled back to the showers. Poor Perkins! He had about as much chance of receiving a special summons to Central City as he had of being appointed commander in chief of the submarine service.

Dale luxuriated in the feel of the warm water running over his body. He was conscious of his broad shoulders tapering down to his narrow waist. The hard muscles over his stomach. Why, he could let a little shrimp like Freddie Biddle over there hit him in the stomach as hard as he liked and never feel it.

He turned off the hot water, gasped as the cold flood hit him, and started his brain to working. Now why had he told all that nonsense to Perkins? Perkins would undoubtedly blab the story all over the place. If there wasn't a letter waiting for him he would be

the laughing stock of the Academy. Already his friends were probably wondering why he hadn't received a summons for special duty. He—Dale Sutton—the biggest man on the campus.

He got into his clothes and hurried out of the gym. Usually a workout and shower left him in a glow but now he felt depressed and anxious. Confound Perkins! If he hadn't come nosing around he would never have made all those absurd statements. But he must get a summons. The high command couldn't pass him over in preference to Allen. He knew how minutely each man's record was scanned. Dale went over every recent contact with his instructors, searching for some incident that might have turned them against him—some chance remark, a word innocently let fall in conversation. There was nothing. He had been scrupulously careful in his conduct. He had never tried to flatter his instructors or seek their praise as so many did. Neither had he been unduly reticent about his talents. Maybe he had been too reticent.

Rounding the corner of the Aerodynamics Lab he collided with a nervous little man carrying a stack of blue-covered papers under his arm. The papers went flying in all directions while the little man gasped in dismay.

"Oh, dear, now I'm sure to be late."

"Sorry, Dr. Wilkins, it was my fault."

"No, I wasn't paying attention to where I was going. Can't help it this time of year. Always so much to do at graduation."

"That's very true, sir."

Bluebooks! The official form of pamphlet used in all examinations at the Academy. The names of the



students were stamped on the cover but the grades would be written inside, together with the instructor's "estimate" of the student's ability. Dale scanned the names frantically searching for his own. Wilkins was his professor in English Literature, a subject which he regarded with the same contempt that he regarded Wilkins himself. Wilkins was an "outsider," a man who had never obtained his commission from the Academy but had risen from the ranks as a common soldier. No matter what he did afterward, no matter what he might become as an officer, he would never be accorded the same deference as an Academy man. There would always be that fine distinction in social status that made him never quite acceptable.

Dale retrieved a handful of bluebooks without finding his own. He spied a couple that had blown against a hedge of plumbago. He reached for one . . . felt his heart thump as he glimpsed his name on the cover. In a moment he had flipped back the cover revealing his grades in the corner: "English Lit: 97. Character Index: 73."

A cold rage possessed him. He had passed the course with a grade of 97, probably one of the highest if not the highest in the class. He didn't care a rap for Shakespeare or Pope or Dryden but he could write as if he did. What a man needed to know was about things he could use. Why waste time writing essays on "What the Lake Poets Mean to Me" or "Milton, a Mighty Organ Note" when your real business in life was learning how to get a spaceship from point P to point Q?

Then why the 73 in Character Index? It was barely passing. Had Wilkins sensed that he wasn't sincere?

It must be the fact that Wilkins was an outsider and that he—Dale Sutton—was not only a big man in the Academy but president of the *Perseids*, as well. The ultraexclusive club which every cadet aspired to make and which so few succeeded. Without money or family background Wilkins could never hope to become a *Perseid* and he knew it. It was nothing but envy. He saw it all now.

There was talk of a new democratic spirit in the force, to replace the old snobbish attitude that had aroused so much criticism in the past. But of course that was all nonsense. There were some people who didn't rate and some who did; no use pretending it could ever be any different.

Dale handed the bluebooks to Professor Wilkins.

"Here you are, sir. I believe we have them all."

"Thank you, Sutton. Let me see—there were twenty-five. Yes, they're all here. Thank goodness! I hadn't recorded the grades yet. It would have been a catastrophe if one were missing."

Dale smiled sympathetically. "Rather embarrassing to all concerned, I imagine."

"Indeed it would. Really don't know what I should have done." He started up the path then paused uncertainly. "Oh, Sutton, in case you should—er—have inadvertently seen some of the grades, I trust you won't reveal this information until the official list is published next week."

Dale's figure stiffened. "Certainly not, sir. I wouldn't reveal a confidence."

"I knew you wouldn't. One of those formalities we have to observe."

So the grades weren't registered—weren't official yet. That meant there still might be time. It was worth trying anyhow.

"Oh, Dr. Wilkins," he called after the retreating figure. "I want to tell you how much I enjoyed your lectures. I never cared much for literature before but after listening to you the subject took on a new significance. You made it seem so clear and understandable."

Wilkins' face lit up.

"Thank you, Sutton. Glad you derived some benefit from my long-winded harangues. It was nice having you in the class."

Then why hadn't he given him a decent character rating? With a mark like that against him he would never be singled out for special duty. It made him furious to fail in anything he desired. He had set his heart upon graduating with honors. Had practically considered it an accomplished fact. Oh, well, perhaps these last grades wouldn't matter so much as he thought. Some fellows claimed the honor list was made up a month before graduation anyhow.

He forced himself to mount the worn steps of the clubhouse at a leisurely pace and saunter casually into the shadowy old reception room. It gave him some satisfaction to reflect that most cadets would have been overjoyed merely to be allowed to enter those sacred precincts. Guests who were occasionally invited were heard to remark afterward, "Heard a good joke over at the Perseids last night," or, "I got this straight while I was dining with a couple of Perseids." Cadets who belonged to the Perseids never

mentioned the fact. Only on the date the club was founded did they wear their pin. To do otherwise would seem like boasting.

Dale deliberately walked by the clerk's desk into the reading room. He felt a certain tenseness in the atmosphere. A dozen cadets were lounging in easy chairs waiting for the dining room to open. With a bored air, Dale took a magazine from the rack and began turning the pages. Was it his imagination or were some of the men eying him peculiarly? News traveled fast on the campus, especially bad news. It would not be surprising if everyone knew he had failed to be summoned to Central City.

Bullard, the secretary, hailed him from a corner by the fireplace. "Hear the good news about Allen?"

Dale's face broke into an instant smile.

"Got it from Perkins over in the gym. Of course it was no surprise to me. I knew he had it coming to him."

Bullard chuckled.

"Well, it was sure a surprise to old Allen. Practically knocked him over. Some of the fellows are taking it pretty hard. The high command doesn't seem to be passing out honors with such a lavish hand this year."

"That so?"

"One advantage of being dumb like me. You never have to worry about honors and things like that." Bullard let his glance rove around the room. "Some of these fellows have been parked here all day. Hoping for that long gray envelope with the seal in the corner."

Dale tossed the magazine back on the rack.

"You probably won't believe me but I haven't given it a thought."

Bullard stared at him incredulously.

"Don't give me that."

"Just the same it's true."

"You mean you haven't even looked at your mail yet?"

"Haven't been near the mailbox today."

"Say, listen," Bullard's voice carried across the room, "maybe there's a letter waiting for you now."

"Maybe there is," Dale replied indifferently.

"But don't you want to know?" Bullard cried. "There's never been a year when the Perseids haven't had at least two men tapped for honors. Gosh sakes, man, you were supposed to be our best bet."

"Looks as if the Perseids might be disappointed this time."

Bullard seized him by the lapel of his coat. "Come on. We'll settle this right now."

He propelled Dale across the lounge toward the clerk's desk. The news had spread into the game room and library. The dining room had opened but no one had bothered to enter—an unprecedented state of affairs. Already a group had gathered around the mail desk.

Dale paused and calmly detached Bullard's hand from his coat. "Thank you, but I'm quite capable of walking without assistance."

Bullard let his arm fall to his side. The room had become very still. Suddenly Dale felt supremely confident. He was absolutely sure of himself, certain that he would succeed. He noticed Perkins in the crowd, his eyes humble and worshipful.

He strolled to the desk and addressed the aged attendant reading the comics in the corner.

"Any mail with my name on it, Pop?"

Pop laid down the funny paper regretfully. "Don't know. Have to take a look."

He fumbled in the boxes behind the desk. It seemed to take him forever to sort through the sheaf of letters with his palsied hands. Dale stood leaning against the counter with a smile of supreme confidence on his face. The smile was frozen there. He wasn't sure whether it would ever come off or not. He had to press his elbow hard against the desk to hide his nervousness.

Pop was nearly through the envelopes.

"Guess there ain't any. Nope—here's one."

He laid an envelope on the counter—a long gray envelope with a seal in the corner. Through the cellophane window Dale discerned his own name glimmering faintly and underneath the stamp of the Space Department.

He shoved the envelope carelessly in his pocket.

"I see the dining room is open," he remarked. "I think I could do with some food."

The crowd opened silently before him as he made his way toward the president's table.

## Chapter 2 *Setback*

DALE's gaze rested by turns on the seven other cadets waiting to see the high command. Funny how you could tell at a glance which ones belonged and which ones didn't. Take that redheaded chap by the window. Obviously he was scared to death. You could tell by the way he sat perched on the edge of his chair twisting his hat in his hands. When he was summoned for his interview he would either be frozen by fright or else bend over too far the other way and be too casual and talkative. Whereas, when it came his own turn, he would know instinctively the right attitude to assume.

A crisp young woman emerged from the inner sanctum where the high command held forth. All morning freshly shaven, alert young men in newly pressed uniforms had been entering that magic portal never to be seen again. The door had closed behind them and they had vanished as effectively as if they had stepped into another dimension.

The receptionist consulted the memo pad on her desk. "Dale Sutton?" she inquired.

"Here," Dale responded.

"Colonel Wenstrom will see you now." Her eyes lingered approvingly on Dale's handsome face and trim figure.

"Thank you."

Dale rose gravely and entered the reception room. The door closed behind him. He was in. There had

scarcely been a day in his four years of training that he had not thought of this moment.

The officer behind the desk was not at all the ogre he had anticipated. He was a man of middle height with iron-gray hair and a mustache that turned down slightly at the corners. He gave Dale a frankly curious glance out of mild blue eyes. Dale thought to himself, *This is going to be easier than I thought. This fellow looks pretty soft.*

Colonel Wenstrom nodded pleasantly and motioned toward a chair. He was seated behind a broad glass-topped desk, bare except for a leather-bound book with the name, DALE SUTTON, inscribed on the cover in gold letters. Within the pages of that book in secret code was everything known pertaining to Dale Sutton. It was not merely Dale Sutton's record at the Academy. It was Dale Sutton, himself!

The colonel opened the book and gave the pages a swift glance as if already thoroughly familiar with their contents. After a few seconds he leaned back in his swivel chair and sighed deeply.

"Well, Sutton, you have an exceptional record."

Dale smiled carefully but said nothing.

"Most exceptional, I might say."

"Is that so, sir?"

"In fact, it's not often we get a cadet with your particular type of personality."

"Indeed."

Dale noticed with amusement that the interviewing officer seemed less at ease than himself. He wondered what his background was. Not too good if he was any judge. He would look him up in the *Space-ship Register* later.



Wenstrom's fingers strayed over the leather binding. "I see you volunteered for extra time on the moon."

"I spent four synodical months beyond the required period, or ten, in all," Dale replied. "Seven, at the base in the *Mare Imbrium*, and three, at Goddard City."

"At Goddard City, eh? Most cadets aren't too fond of that place. They don't relish being out of sight of the Earth."

"Somehow it never bothered me which side of the moon I was on," Dale said frankly. "I wish to emphasize that I would not want to receive special credit on that account. It was simply that the moon never bothered me as it did some of the others."

"No trouble about shadows?"

"Not in the least."

The colonel smiled meditatively.

"The days when I was in the service, they used to tell all kinds of stories about the back side of the moon. There was a persistent rumor that it was haunted. Haunted by the ghosts of spacemen who had lost their lives in the early days of lunar exploration."

"That rumor is still as much alive as ever."

"I dare say. Curious how hard those things die. It really bothered many of my classmates. Perfectly courageous otherwise. Scared to death when it came to something intangible which they couldn't see."

"I doubt if even a ghost could last very long on the moon," Dale remarked. "Not without a spacesuit at least."

The colonel nodded and frowned.

"Of course all the legends aren't confined to the

moon. Some of these old-timers can tell some tall tales about the other planets, too."

Now what was he driving at, Dale puzzled. The colonel's face was as bland as ever but his eyes were cold and probing.

Dale addressed him impressively, "Don't you think the situation will be changed by these new fast liners like the *Albireo*? Formerly the men have had to spend so much time between stops. Naturally they get to brooding. But ships like the *Albireo*, manned by younger men, should drastically alter the situation."

Dale stopped with his heart in his mouth. He had finally gotten the conversation around to the *Albireo*. He couldn't say directly that he would like a position on the ship but he had come as close to it as he dared.

"I'm glad to get your opinion," Wenstrom said. "You'd be surprised at the attitude of some of the men."

"But how can they think anything else when the *Albireo* can cut the time to Mars in half?"

"I was referring to this ghost business. There's something about space that breeds superstition."

Still harping on ghosts. Perhaps he was a little touched himself on the subject. He had a kind of worn look as if he had suffered in his lifetime.

Dale sighed. "We live in what we are proud to call an enlightened age. Yet the belief in ghosts and spirits and mysterious vibrations is as common as ever."

"Very true."

The colonel sat up and opened the record book as if he did not care to pursue the subject further. He ran his eye down the page.

"I see you're a member of the Perseids. Seems to

me I was talking to another member of that organization recently—can't recall his name."

"Jim Allen perhaps."

"That was it, Allen. Fine chap. He's your secretary, I believe."

"Treasurer," Dale corrected.

"Knew he held some office or other. He had such a fine record in mathematics we assigned him to the *Albireo*. They have some really tough problems in navigating that ship."

Fine record indeed! Dale thought. Why, the poor dumbbell would have flunked out long ago if it hadn't been for him. Nonetheless, he spoke warmly:

"I'm sure Allen's ability in mathematics will be of great service on the *Albireo*."

"I suppose you Perseids like to stick together?" the colonel inquired, with a lift of one eyebrow.

Dale could scarcely conceal his exultation. Just give him a berth on the *Albireo* and he would show them. But it was bad to seem too eager. They liked to have you give yourself away like that then slap you down hard.

"Naturally we have certain traits in common," Dale replied cautiously. "But after all, we're through school now. We can't keep on being classmates forever."

Wenstrom smiled wearily. "Some cadets sound as if they'd like to become professional college students."

Dale grinned. "I think I know the kind you mean, the ones who show up for all the reunions. Always talking about the good-old-days."

"Exactly. Glad to see you have a more adult attitude. Well, Sutton, as I said before we don't often find a cadet like you every day."

"It's very kind of you to say so, sir."

The officer rose to indicate the interview was over. He seemed very cordial as they shook hands. Dale found himself liking him much better than when he came in. Not a bad sort at all really. A trifle seedy from too much desk work but that was to be expected. Dale was sure he would never be satisfied to remain at a desk all day interviewing candidates. He wanted more excitement.

"You'll hear from us in a few days informing you of your appointment," Wenstrom told him at the door. He took a card-size calendar from his pocket and ran his pencil down the side seeking the date. "Here we are. The letter should reach you by Thursday. Oh, how clumsy of me!"

The pencil and card had fallen from his hand. In an instant Dale was on his knees to retrieve them. As he groped about the officer's feet the girl entered from the other room. Dale's face went crimson. He rose awkwardly and handed the card and pencil to Colonel Wenstrom. He fancied he detected a trace of a smile on the girl's face as he murmured a few words at the door and hurried out.

It was a trick. He was sure of it. One of the oldest in the book and yet he had fallen for it. What had possessed him to go groveling on his knees like that before the colonel? He felt he had made a favorable impression up to that incident at the door. Then he had blundered stupidly. He simply hadn't thought. But then that was exactly what they wanted to find out about you—how you would react when confronted by an unexpected situation.

The next two days at the Academy were an agony.

Again and again he went over every detail of the interview in his mind. The more he thought about it the worse it seemed. He was barely able to keep up a cheerful front before his friends. Fortunately examinations were over and most of the fellows had left for the holidays. He spent a good deal of the time in his room staring at the wall, or in beating the heavy bag over in the gym.

Wednesday night he felt intolerably restless. He tried to sleep, but after tossing for two hours, turned on the light and seized the first book that came to hand. It was a volume of Elizabethan drama that Professor Wilkins had assigned for outside reading. Dale had read a little and then laid the book aside never intending to open it again. Now, browsing through the pages in his dismal state of mind, he found new meaning in the lines. It occurred to him that they had been written for some other purpose than to torment students in Lit. 3B, as he had previously supposed. He tried to recall some of Professor Wilkins' remarks about the men who had written them. He knew that many of them had led unhappy lives like himself; but whereas he could only relieve his feelings by punching the heavy bag these men had expressed themselves in immortal verse.

"Farewell the tranquil mind; farewell content!  
Farewell the plumed troop and the big wars  
That make ambition virtue!"

Now that his own life was ruined he could feel more sympathy for other people in the same fix. He decided he ought to do more reading in the future.

Next morning he was aroused by the housekeeper knocking at his door. The clock by his bed stood at eight-thirty. It gave him a guilty feeling to have slept so late. Fortunately there was no school so it really didn't matter.

It occurred to him that the mail might already be there. That letter from the high command might be waiting for him now. He bounded out of bed and made for the shower.

In his haste, he cut himself while shaving, so that it was past nine before he was dressed and presentable. To his exasperation Pop informed him the mail had not yet arrived. Ought to be here any minute though. Was there something special he was expecting? Dale shook his head and wandered off to the kitchen.

Breakfast was not served after nine o'clock in the clubhouse, but if you were on good terms with the cook, you could always get a bite in the kitchen. Dale tucked the morning paper under his arm and retired to an isolated corner of the kitchen by the dishwasher. He glanced absently at the headlines while he sipped his coffee and munched a buttered roll. The news was singularly dull. Some miners killed in an explosion . . . two children abandoned on the moon . . . the ten best-dressed women in the solar system. He turned to his favorite news commentator. Today for the edification of his readers he had dug up some old tales of ghosts and missing men in the spaceways. Dale threw down the paper in disgust. Think of getting paid for stuff like that!

He signed for his breakfast and hastened back to the desk. Pop was sorting the mail. Dale sauntered

up to the counter. Pop handed him several letters—advertisements, bills, circulars.

"Mostly all propaganda this mornin'. Hold on a minute. I'll bet here's the one you're lookin' for."

It was! The long official envelope with the Central City postmark. He dashed up to his room and locked the door. Then he opened the envelope carefully so as not to tear its precious contents. He extracted the two pages and scanned the printed page, searching for the words, written in the vacant spaces, that told his real fate. Here they were over on the second page. They struck him with the paralyzing impact of a blow to the solar plexus. It was worse than anything he had expected. Much worse. The very worst.

". . . you are ordered to report to Captain George Taggart of the *Albatross* on the 13th inst., there to await further instructions . . ."

He jerked a bulky volume down from the bookshelf and flipped through the pages. *Adelaide . . . Adrienne . . . Alaska . . .* Here it was, the *Albatross*. "Built during the Martian colonization period; wrecked on Gaca; repaired and put on the Venusian run . . ."

Why, the ship must be one of the worst old tubs in space. If it was built during the Martian colonization period it was twenty years old at least. And this Captain Taggart couldn't be an Academy man. He couldn't even be a military man. He must be a plain sailor—a barbarian. And he was supposed to ship on this old wreck and take orders from him.

It was worse than an insult. It was a slap in the face. He'd never do it. He'd resign first. Throw it back in their faces. After all, he was different from the others at the Academy. His parents were wealthy.

He'd command a spacefleet of his own—the best that money could buy. Someday they'd come crawling to him.

He read the letter for the third time. A slip of paper fell out. It was the return envelope with the form notifying the commander at Central City of his acceptance of the order. With a savage gesture he hurled them into the wastebasket.

For a long time he sat bent over his desk too wretched to move. He was alternately filled with despair and blind futile rage. Never had anyone at the Academy been so humiliated before. There was something in his record the high command didn't like. Since there were no grounds for dismissal, they had taken this method of forcing him to leave of his own accord.

The more he thought of it, the more certain he became that he had struck the right solution. It was pure spite, malicious jealousy on somebody's part. Probably they were gloating over him this very minute.

Dawn was filtering through his window when he fished the papers from the wastebasket and carefully smoothed them out on his desk. Then he reached for a pen and with painstaking care wrote his name at the bottom of the order accepting the assignment.



## *Chapter 3* *Mission to Nowhere*

**D**ALE woke from a restless sleep. The hardest part about becoming adjusted to the moon was not living underground, or the lower gravity, or even the necessity of putting on your spacesuit every time you stepped outdoors. It was the horrible dreams you had the first hundred hours after landing. Everybody had them. It was a standing joke. Their cause was still obscure. Apparently they originated from the effect of the lower gravity on the involuntary nervous system. Whatever the cause, they were extremely disagreeable. Unlike ordinary dreams their impression lingered for hours afterward. For three sleeping periods, Dale had been oppressed by a dream of being lost at some immense depth underground, and of wandering for an eternity seeking the way out, only to become more hopelessly lost.

He dressed and went downstairs to the lunchroom on the bottom level. The food was better than you might expect in a lunar hotel of this kind. After all, you didn't find the most discriminating type of clientele at the south pole of the moon. Many of the men were a steady, honest sort who held down minor jobs on ships specializing in short runs between the Earth and moon with an occasional trip to Venus and Mars. Sometimes one saw a deep-space man who had ventured within the asteroid belt or even to such distant posts as the Jovian satellites. These were readily recognized by their gruff manner and general

air of reserve. Then there was always a host of miscellaneous characters around, who never seemed to have any visible means of support, but still always managed to have a little money in their pockets. Many were lunar prospectors, who perhaps once in their lives had made a strike in mining and had been ruined for honest work ever since. Invariably they had a story to tell of a meteorite of fabulously rich material that had smacked into the moon and formed a crater pit of pure gold. All they needed was a little capital—say a couple of hundred thousand—and they'd have it out in no time. But if you staked them to a hundred dollars they'd be glad to give you ten per cent interest. Curiously enough these ghost craters, with their golden cores, were always located on the inaccessible back side of the moon. For some reason the richest meteorites had shown a marked preference for landing in places that were hard to reach.

Dale surveyed the lunchroom with dismay. There was scarcely a vacant seat available, only long tables with benches where each diner was jammed so close against his neighbor that there was hardly room to wield his knife and fork. Dale instinctively shrank from close contact with his fellow men. One of the best features about being a Perseid was that he could dine alone or with guests of his own choosing. Well, there wasn't much choice here. If he wanted anything he would have to take what he could get.

He started to wedge his way through the crowd toward a vacant table at the far end of the room near the window. Grudgingly, and with sullen glances, the men gave way before him. He was glad he was in civilian clothes. Before, he had always worn his

uniform with pride—as a mark of distinction—but here somehow it would have seemed out of place.

He took a seat at one end of the table as far from the other occupants as possible and studied the blurred lettering on the bill of fare. It seemed to consist mostly of eggs. One good thing about chickens was that you could raise them anywhere. They were dumb but adaptable.

"Shove that ketchup down this way, will you, Mac?"

A man had slipped quietly into the place next to him. He was a wizened old fellow with the sad reproachful eyes of a dispirited water spaniel.

"Don't mind my sitting here, do you?"

Dale regarded him coldly.

"I don't mind. Why should I?"

The little man sidled closer till their elbows touched. Dale would have moved away except that he was already sitting on the end of the bench so that farther progress was impossible.

"Didn't know whether they'd let me sit here or not," the stranger said. He glanced furtively around the room. "Thought maybe this table was reserved."

Dale smothered a laugh.

"Reserved? In a place like this?"

"You know, for some of the big shots around here."

A scowling waiter thrust Dale's eggs and coffee in front of him, leaving most of the coffee in the saucer. Dale heaved a sigh and attacked his eggs, which proved better than he expected. He decided not to let this old fellow ruin his breakfast. Slightly shadow-crazy probably, but otherwise harmless. There was a pathetic quality about him that appealed to Dale's protective instinct.

"Relax," he advised. "If anybody asks us, we'll tell 'em sure it's reserved—for us."

"You think it's all right?"

"Absolutely."

His friend eyed him critically. "You're pretty sure of yourself for a young fellow."

"I know my rights, if that's what you mean."

"You better watch out."

"I can take care of myself," Dale replied easily.

"You never been here before I'll bet."

Dale was unable to suppress a frown of annoyance. "How did you know?"

"You just don't look like you'd been around much."

Dale told himself that it was a matter of complete indifference what this old fellow's opinion of him might be. Nevertheless, it irritated him to think that he failed to measure up to the other men in the room. What if he wasn't so very big? Get them in the ring and he'd lay them out in a minute.

The man applied himself to the eggs and potatoes on his plate. Presently he wiped his mustache and gazed out of the window at the Leibnitz Mountains towering bare and white like giant tombstones against the black horizon of the south lunar pole.

"You know those mountains?" he inquired, gesturing with his fork.

Dale shook his head.

The man leaned closer as if he were confiding a vast secret.

"I've been all over 'em. 'Specially Leibnitz Epsilon. I know every crack and crevice in the Leibnitz's. There's mineral veins in those mountains nobody

knows about but me." He shot Dale a quick glance. "You got any money?"

Here it comes, Dale told himself. The long tale about the fortune underground. It might be amusing to coax him along. See how far he would go.

"A little," Dale admitted.

"Well, hang onto it. There's fellows here can tell you stories about mines that'll make your eyes bug out. Don't you ever believe a word of 'em. All they're after is your money."

"Thanks for the advice."

Dale picked up his check. Now that it was time to go he felt extraordinarily sorry for this old prospector. How badly he had been mistaken in him.

"You've done me a good turn," he said. "I think this meal is on me."

The man covered his check with his hand. "I pay my own way."

Dale laughed good-naturedly.

"Well, all right. Thanks all the same."

While he was waiting for his change at the cash register he noticed that the room had suddenly grown very still. All eyes were centered on a group of men heading for the table he had just left. A stocky, thickset man was in the lead. His long arms hung lightly from his massive shoulders. He walked with the light, easy tread of a natural athlete.

Dale could feel the tension mounting momentarily as the group neared the table. The cashier beckoned furiously to one of the waiters.

"You shouldn't have let anybody sit at that table."

"Well, I had to put 'em someplace."

"Now there's goin' to be trouble."

"Aw, there's nobody there but some old guy."

Dale scooped up his change. "What's all the row about?"

The cashier gave him a scornful look.

"That bunch always wants the best table by the window. You'd think they owned the place."

"If they cause trouble why don't you call the police?"

"Call the police—at the south pole!"

There was a scuffle over by the window. The man in the lead had the old prospector by the arm. Now he was shoving him along the bench.

Dale strode across the room. He tapped the burly man on the shoulder.

"Let him alone," he commanded sternly.

The man regarded Dale out of unwinking eyes.

"Who says so?" he drawled. His voice was remarkably low and soft.

"Never mind who. Just let him alone."

The burly man's glance roved over Dale's slim frame. His eyes were calm, cool, impersonal. He jabbed the prospector in the back with his thumb.

"Get going before you get hurt," he growled.

A rather nice-looking elderly man interposed.

"Now take it easy. There's no point in starting anything."

"Who's starting anything?" the burly man roared.

"I am," Dale cried, leaping at him.

A sharp-faced individual with a shock of red hair stuck his head out from behind the elderly man's arm.

"Watch him, Taggart!" he yelled.

*Taggart!*

That was the captain of the *Albatross*. The man he

was supposed to meet in another hour. The man who would give him his orders.

Dale saw the blow coming. Saw the fist growing larger. Knew it would hit him in an instant . . .

A rocket exploded on his jaw. It was the last thing he remembered.

Dale halted before the frosted-glass window on which the words ALBATROSS TRANSIT CO. were inscribed in faded letters. In the center of the glass was the figure of a dispirited bird with the legend underneath "We Go Anywhere." In the lower corner of the window was an invitation to WALK IN. Dale hesitated a moment and opened the door.

A plain, middle-aged woman regarded him appraisingly from her desk behind a battered brass railing. Dale advanced to the railing with as much dignity as he could assume considering that the lump on his jaw had now reached the size of a walnut and was still swelling.

"I'd like to see Captain Taggart, please."

"Do you have an appointment?"

"I was ordered to report here by the Interplanetary Space Command."

"Who is it calling?"

"My name is Dale Sutton. I think the captain will know me. As a matter of fact, we've already met."

The woman spoke a few words into the transmitter at her side. After a brief conversation she nodded to Dale. "Captain Taggart will see you. Down the hall second door on your left."

Dale found the door already open. Captain Taggart, with the two men who had been with him in the

lunchroom, were bent over a chart covered with wavy lines like a contour map. The captain laid down his pencil and studied Dale with eyes that were as calm as when they had met an hour ago.

"So you're Dale Sutton," he said.

Dale nodded curtly. "At your service."

The captain's eyes strayed to some papers by his side.

"Just out of school, I see."

"That's right."

"You must have a swell record . . . drawing a fancy assignment like navigator on the *Albatross*."

"I stood second in a class of two hundred."

The captain turned to the little redheaded man on his right.

"Hear that, Mac? He was second in a class of two hundred."

The redheaded man shook his head. "I guess you just naturally have all the luck, Taggart."

Taggart turned back to Dale.

"Had any experience outside the Academy?"

"Nothing worth mentioning."

"Ever been in deep space?"

"I've never been beyond the orbit of Mars."

"How do you think you'll like the *Albatross*?"

"From what I've seen of its crew," Dale replied, making no effort to conceal his contempt, "I don't think I'll like it."

For a moment nobody in the room moved or spoke. Then Taggart rose deliberately and strolled around to the side of the desk where Dale was standing. He hooked one leg over a corner of the desk and sat for awhile studying Dale through expressionless eyes.



"Maybe I don't like smart young cadets just out of school either. Remember I didn't ask you to come on this trip. I had you wished on me by the government. But I'm still captain of my own ship. So make up your mind now. Either come along and do as you're told or start hunting another job."

Dale's hatred of the captain was so intense as to be almost physically painful. He had a wild impulse to turn on his heel and stalk out of the room without a word. But he had a score to settle first . . .

"I'll co-operate with you in every way possible," he said.

The captain's gaze lingered on him suspiciously. At length he got to his feet with a grunt and waved one hairy arm across the table.

"Maybe we ought to get acquainted. This is Luke MacAllister, our business manager"—he indicated the ferret-faced man with red hair—"and this is Alex Fleming, our maintenance engineer."

MacAllister acknowledged the introduction with a jerk of his head. Fleming rose and shook hands cordially. Dale noticed that although his hair was nearly white his face was as smooth as that of a young man.

"Unfortunate incident there in the lunchroom," he said, smiling slightly at Dale's swollen jaw. "I'm sure we didn't mean any harm to your friend."

"Just asked him to shove down a little," Taggart muttered.

"It's all in the past so far as I'm concerned," Dale said stiffly.

MacAllister rubbed his hands gleefully.

"Now that's settled, suppose you come around here and have a look at this chart."

Dale examined the chart with some interest. The wavy lines had a familiar appearance. He recognized the long folds running down the sides like curtains, with the oval and dumbbell-shaped figure near the center.

"Make any sense out of it?" Taggert asked.

"These are undoubtedly lines of zero velocity," Dale said. "They represent lines which define regions in which a massless body could move in the gravitational fields of two finite bodies, such as a planet with a large satellite."

"Any particular planet?" MacAllister asked quickly. In his eagerness he was leaning halfway across the table with both knees drawn up on his chair.

Dale shook his head slowly.

"Offhand, I'd say it was a planet of considerable mass, judging from the shape of these contour lines."

"Couldn't be one of the terrestrial group?" MacAllister persisted.

"Unless I'm very badly mistaken, these lines refer to some member of the giant group."

"One of the giants, eh?" Fleming murmured. "That sounds bad."

Taggert hunched over the table aggressively. He wore a short-sleeved pullover shirt which revealed his muscular arms to advantage.

"If you ask me, we bit ourselves off a lot of trouble. I was against that government contract from the start."

"You like the money end of it all right."

"Sure I liked it. But then I got to thinking—"

"That was a mistake." MacAllister ran his finger down one of the wavy lines. "Just what does this signify, Mr. Sutton?"

"According to the conditions of the problem, that line signifies that on one side of the line the velocity of the infinitesimal third body is real."

"How about the other side?"

"On the other side the velocity of the body is imaginary."

"Imaginary," Taggert ejaculated. "Never heard of a velocity like that."

"I mean imaginary in the mathematical sense," Dale explained. "It means simply that an infinitesimal body such as a spaceship could not move beyond this line without violating the conditions of the problem."

He could not refrain from laughing at sight of the men's bewildered faces.

"At least it couldn't move beyond the line and remain in our kind of space. It would have to be in some unreal ghostly sort of realm."

"What's that?"

Dale regarded Taggert with astonishment. The captain's face was changed in a way he would not have believed possible. It was the face of a man in genuine fear.

"I merely remarked that the velocity would become imaginary. It wouldn't be real any more."

"I mean about ghosts."

Dale shrugged indifferently. "I was just being dramatic, I guess."

"Is that some more of the stuff they taught you at school?"

"That, and other things."

"Well, cut it out," Taggert said irritably. "We can get along without any of that society stuff around here."

"Just as you say," Dale agreed cheerfully.

"This mission is different from any this firm has undertaken before," Fleming interposed hastily. "The high command at Central City has made us excellent terms. Really quite extraordinary, in fact. Today they sent us some instructions along with this chart—"

"It might help if I knew just where the *Albatross* is bound," Dale interrupted.

The three men looked at one another doubtfully. Fleming pulled down a chart from the wall showing the solar system out to the orbit of Jupiter.

"According to instructions we're to rendezvous with two other ships—the *Equinox* and the *Perihelion*—at this point." He put his finger on a spot at the edge of the asteroid belt in longitude 300°.

"And then what?" Dale asked.

Fleming grinned ruefully. "We don't know."

MacAllister giggled nervously. "That's what we gotta find out."

"Believe me, it won't be any good," Taggert said grimly.

Dale kept his face carefully expressionless but inwardly he was exulting. For he knew that his superiors, despite their hard-bitten exterior, were afraid—terribly, desperately afraid.

## Chapter 4 *Opposition*

THE *Albatross* was probably no worse and certainly no better than hundreds of other ships of its class. But to Dale, after his formal training at the Academy, it seemed impossible that it could be worse. There was a laxness about making reports and keeping records that he found simply incomprehensible. One duty that had been impressed upon him was the necessity of examining the hull at intervals of fifty hours or less for damage due to meteoritic fragmentation. Not to do so was regarded as downright slovenliness. But on the *Albatross* a casual inspection every hundred hours was held to be amply sufficient. The same was true of radiation hazards. Nobody bothered to see if the ship had been unfortunate enough to receive a burst above the danger limit. To worry about such matters was considered a sign of weakness closely bordering upon the effeminate. On the other hand, the crew was immensely concerned over their spacesuits. They were continually checking them for leaks and reinforcing fancied weak spots with patented self-sealing compounds. The men displayed a curious mixture of bravado combined with superstition and wholly illogical prejudices.

Dale had supposed that his commission from the Space Academy would automatically entitle him to a certain degree of respect from the crew. On the contrary, he soon found that instead of respecting his superior knowledge, they resented it bitterly and showed it in scores of petty ways against which he

was powerless to resist. On the whole the younger men were the hardest to handle. They felt that they were as competent as Dale and more experienced but, owing to lack of education, could never hope to rise much higher than their present position, whereas there was no position to which Dale might not aspire. Only the fact that Dale was an officer, albeit a minor one, prevented him from being ragged unmercifully. Thus the crew was always meticulously careful to address him as "sir" and to receive his commands with elaborate deference. Yet his orders were continually getting sidetracked, or else he met with so much resistance that he found it easier to do them himself.

What irked him most was that he was never consulted even on matters upon which he was obviously better informed than anyone else on the ship. In the crowded confines of the *Albatross* everyone ate at the same table regardless of rank; in fact, there were no formal distinctions in rank whatever. Yet differences in rank based upon intangible qualities, such as general knowledge, force of personality, and proven courage, quite definitely existed. In all such matters Dale found himself woefully lacking in the eyes of his shipmates. Nobody asked his opinion. Nobody chatted with him in their off hours. Nobody confided in him or sought his companionship.

It galled him to find that the opinion of the cook, Chuck Osborne, was esteemed as superior to his own. During the long hours of isolation in space the most trivial topics often assumed unnatural importance. Thus at mealtime an argument arose over the record for the mile run.

"All right, so they've got the record down to three

minutes fifty seconds. Look how long it took to get off that last second. I tell you there's a limit to man's endurance."

"And I say you can't set a limit. It's crazy to say there's any limit."

"Why, they've got below three-fifty already. There's a fellow at Ohio State run a mile in 3:48 last year."

"What's his name?"

"Well, I can't recall the guy's name but I read it all right."

Dale cleared his throat. "His name is Ken Schultz and he goes to Illinois not Ohio State," he said quietly. "He happens to be a personal friend of mine. He holds the world's record for the mile—three minutes forty-eight and one-fifth seconds."

"What's the world's record for the mile, Chuck?"

Chuck closed the lid to the deepfreeze unit. "World's record for the mile is three-fifty flat. Fellow down in New Zealand made it."

"What did I tell you? So they haven't broke three-fifty yet."

The way in which his ideas and opinions were ignored gave him a sense of insecurity he had never experienced before. At the Academy his decision on a subject had been considered final. Now he was thrust among a group in which his thoughts counted for nothing. In his twenty-one years he had made few friends and often took violent dislikes to people on first acquaintance. Yet he wanted other people to like him and felt deeply injured when they didn't.

They were about a hundred days out, well past the orbit of Mars, when Dale appeared at breakfast wearing a small blue pin on the point of his collar. When

a group of men live as closely confined as those in a spaceship, each individual's peculiarities soon become a matter of concern to everyone on board. The slightest deviation from normal immediately becomes a subject for general comment and discussion. There is no worse place for gossip than the snackbar of a spaceship.

Dale was sure the pin received its full share of attention although no one ventured to remark about it. He was in the navigation room checking the Z-coordinate on the dead-reckoning computer when Collins, one of the assistant engineers, strolled in. He had been below testing the pumps and his fingers were stained with grease. Dale had never been sure how to take Collins. He was a witty youngster and very popular with the rest of the crew. Dale had often been forced to laugh at his jokes which he had to admit were genuinely funny. Thus he was rather pleased to have Collins pay him an unexpected visit.

"That's a nice pin you have there, sir," Collins said. "May I ask what it stands for, sir?"

"It's the emblem of a society I belonged to at the Academy," Dale replied, smiling with pride in spite of himself. "Perhaps you've heard of it—the Perseids."

"The Perseids!" Collins eyes opened wide in astonishment. "Don't tell me you're a member of the Perseids?"

"I was president in my senior year."

"Think of that—president!" He drew back surveying Dale with profound awe.

Dale touched the pin fondly. "We're only allowed to wear the pin on August 10, the day the Earth encounters the Perseid meteor stream. This happens to



be August the tenth so I thought I'd put it on for old time's sake."

Collins seemed unable to get hold of himself completely.

"Gee, I've often wondered how it feels to be a Perseid."

Dale laughed modestly.

"Oh, it's probably overrated like a lot of other things. Although it is considered quite an honor."

"Would you mind if I examined the pin, sir? I've never seen one up close."

"I don't mind."

Collins ran his fingers over the pin feeling of the surface with considerable interest.

"Certainly is beautiful, all right. The Greek letter Pi outlined in pearls."

Suddenly his face registered acute distress.

"Oh, I'm so sorry, sir!" he cried.

"What's the matter?" Dale asked.

"I've got your shirt all dirty."

Dale glanced down at the corner of his shirt. The collar was streaked with grease from Collins' fingers.

"That's all right," Dale told him. "I was about due for a clean one anyhow."

"But it's not all right," Collins protested. "Let me clean that off."

He pulled out his handkerchief and began rubbing Dale's collar vigorously.

"Can't seem to get it off. I do hope you'll forgive me, sir." He placed one hand on Dale's shoulder with an imploring gesture. "Now look at me—I've gone and made it worse!"

The whole front of Dale's shirt was covered with

long greasy streaks. Three of the most prominent formed a crude representation of the Greek letter Pi.

"I hope I didn't hurt your pin, sir."

He reached for the shirt again but Dale shoved him roughly aside.

"I'm so sorry," Collins wailed. "I'll get some cleaning fluid—"

"Get out!"

Collins cowered back as if in terror. "Gee, he might have hit me—like he did the captain."

Collins scrambled down the ladder to the snackbar on the next level. Soon the sound of whispers and stifled laughter floated up from below. Collins was detailing the story to the boys around the counter. In another two minutes the whole crew would know.

Tears of rage and vexation welled in Dale's eyes. When he tried to shake them aside, the drops flew into the air and floated lazily about, forming a cloud encircling his head. In a panic lest someone see him, he dashed over to the mechanical computer by the wall, where his face would be partially hidden. Then for a few minutes he gave way completely to his emotions. He wanted to be among people of his own kind again. People who knew and understood him and believed what he thought was important. If he could only hide away where his misery and shame would never be revealed! But the last thing you could do on a spaceship was find a place to hide.

How could he have been taken in so easily by that miserable little Collins? And why had he worn that pin in the first place? In his own heart he knew it was because he had hoped it would excite the admiration of the crew. Well, he had learned his lesson. He tore

the pin from his collar and thrust it out of sight in a drawer of his desk.

But what rankled most was the fact that the crew had drawn an entirely erroneous conclusion about his encounter with Taggart. Because he had stood there like a simpleton, too overcome on hearing the captain's name to defend himself, they thought he didn't know how. The idea had never even occurred to him. He had gotten in the habit of thinking that everyone knew he was an expert amateur boxer.

Well, that was one thing he could straighten out in a hurry. He'd go down there now and take that whole bunch to pieces.

"Don't do it."

Fleming laid a restraining hand on Dale's shoulder as he started toward the ladder. His first impulse was to go on regardless, but something in the older man's expression made him hesitate.

"It's none of your business what I do," Dale retorted. He knew that his eyes were red and swollen but he no longer cared. In fact, he felt a grim pleasure in seeing how miserable he could be.

"Everything that happens aboard this ship is part of my business," Fleming said. "Now, before you go off half-cocked, let's stretch out over here and talk things over."

He pulled down a couple of bunks and indicated Dale to take one while he lay down on the other. Dale sat facing the wall with his head buried in his hands.

"First let me say that I consider Collins' action inexcusable," Fleming began. "You may rest assured that he will be properly disciplined."

"The little rat!" Dale cried. "I'll discipline him."

"No you won't."

"Do you think I can't do it?"

"I'm not talking about that. I'm just telling you there will be no brawling aboard this ship."

"I suppose Captain Taggert would be shocked," Dale remarked dryly.

"Taggert has his faults," Fleming admitted. "He's rash and impulsive and inclined to let himself go on land. In space he makes a pretty good captain. In any case, that's beside the point. I said no brawling."

Dale was unable to repress a sob.

"I can't take it," he choked. "If you knew how I feel."

"I know exactly how you feel," Fleming said in a kindly tone. "Do you think you're the only person on this ship who's ever had his feelings hurt?"

"Not the way I have."

Fleming had been slowly drifting toward the outlet end of the air-conditioning system. He pulled himself back to the cot and fastened the strap about his waist.

"No matter what happens in this world the one thing that never changes is human nature," he said, when he had made himself comfortable. "So far as their feelings are concerned, people aren't a bit different than they were a century ago. The thing that still interests them the most is themselves."

"They used to claim that life would be entirely different after space travel was established. I can remember listening to my grandfather tell about it. To hear him you'd have thought the whole world and everybody on it was going to be transformed overnight. It only goes to show how wrong people can be."

He chuckled thoughtfully.

"Everybody was so sure life would be bigger and better and more wonderful when we had conquered space. They filled the air with fine-sounding phrases like the 'opening of a new era for mankind' and the 'greatest adventure in the history of man.' In many ways they were right. It *has* been wonderful. But the fact remains that most people in the world are still primarily interested in their own little daily lives."

"I don't know about that," Dale objected.

"Look at yourself only a minute ago. You were all tied up in knots because your feelings were hurt. To you, your feelings were bigger than all the planets and stars and nebulae in the galaxy."

"Don't you think I have any pride?" Dale demanded. "How would you feel if somebody had wiped his dirty hands all over your shirt?"

"I'd be plenty sore," Fleming agreed. "But remember that Collins wanted to make you sore. You're behaving exactly the way he wanted you to behave."

"All right—so I am."

Fleming studied him for a moment in silence.

"You know, I'm probably the only friend you've got on this ship."

"I didn't know *anybody* liked me," Dale said bitterly.

"I guess I like you because you're so different from me," Fleming mused. He hesitated uncertainly before going on. "I'm a failure. I never quite made the grade. Whenever a big chance came along I always drew back. Never had any confidence in myself. I was scared to death I wouldn't measure up. Well, sure enough,

I never did. Look at me today—a part owner in a run-down shipping concern.”

“Too bad,” Dale grunted.

“Now *you’re* too much the other way. If anything, you’ve got too much confidence. You’re bound and determined to keep ahead of everybody else. Other people don’t like it. That’s why Collins pulled that trick on you. He wanted to take you down a peg.”

“He made me look like a fool!”

“I’d be willing to bet you’ll thank Collins for this someday.”

“Thank him!”

“Don’t you know your friends aren’t half so much help to you as your enemies? A man needs a friendly pat on the back now and then. But the people who help you most are the ones who make you grit your teeth and fight twice as hard to overcome them.”

“That still doesn’t make it any easier to face that bunch, knowing what they’re thinking about me.”

“What do you care what they think? The important thing is what you think about yourself.”

Dale clasped his head in his hands. “I’m all mixed up. I don’t know what to think.”

Fleming was about to reply when he was interrupted by a bell ringing above the control desk.

“Looks like something’s up,” he murmured. He unlaced his belt and propelled himself over to the dead-reckoning tracer. “Say, I wonder. . . . No, it can’t be.”

“Anything wrong?” Dale inquired, moving over beside him.

“I’ve got a hunch we’ve arrived. Let’s go up in the astrolab and find out.”

Before they could move, Taggert came shooting up from below. He swung himself around the railing with a powerful pull of his right arm that sent him halfway across the room.

"What goes on here?" he demanded. "We've overshoot our mark by ten thousand miles. Now we've got to double back on our course."

"You mean we've reached our rendezvous position?" asked Fleming.

"Would have if we'd been on course."

"It was my fault," Dale said. "I wasn't watching the dead reckoner the way I should."

Taggert's glance flickered to the streaks on Dale's shirt. His eyes were sardonic but he said nothing. He nodded to Dale.

"Reverse course. Put the ship on automatic pilot. Then come up to the astrolab."

Fleming followed Taggert up the ladder while Dale hastened to the switchboard. He touched the button. A barely perceptible vibration ran through the ship as the rocket motors went into action. Involuntarily he steadied himself with one hand against the instrument panel. It was the first time he had experienced weight in a month. He kept his eyes fixed on the indicator ticking off the seconds in the center of the board. When the hand came to zero he flipped over the lever that put the ship on automatic, then hurried up the ladder to the astrodome. Taggert and Fleming were gazing excitedly out of one of the windows. Two strange objects were floating against the stars of Pleiades, objects that looked as if they had no right to be there. They were like great bugs clinging against the black mantle of the sky.

"It's the *Equinox* and the *Perihelion*, all right," Fleming said, adjusting the focus on his field glasses.

"Now maybe we'll learn something," Taggart growled. He turned to the radio operator. "Any word yet?"

"Not yet. There—they're coming in now."

Dale's heart leaped. This was real adventure at last. He had the strongest conviction that they were bound on some momentous undertaking into far distant realms of space. So he *had* been selected for some big project after all. But why hadn't they told him?

He glanced at the grease stains on his shirt and laughed. Already the incident seemed trivial and faraway.



## Chapter 5 *The Anomaly*

MACALLISTER's brow was furrowed by a deep frown, as he scowled at the yellow slip of paper in his hand.

"I've heard about security but I never knew anything to beat this! It says here we'll get one word from the *Equinox* and another from the *Perihelion*. We've got one word ourselves. We put the three of 'em together to make a sentence. We then proceed to follow instructions and establish bases as indicated."

"What's our word?" Fleming asked.

"Our word is *The*," MacAllister said.

"That's a big help," Taggart grunted. "How about that other stuff those government fellows gave us?"

"It's in a steel box secured by a time lock," said Fleming. "We can't get into that for quite awhile yet."

MacAllister waved for silence. "There's some other instructions down here at the bottom. It says we're to remain at this position from 0000 to 1200 and keep a sharp lookout at all times." He glanced at the telechron clock. "Why it's almost 0000 now."

Taggart jerked his thumb at Dale.

"Sutton, get up there in the astrodome and keep a sharp lookout at all times."

Dale's instinct was to rebel under the sarcasm in the captain's voice but Fleming's steady gaze had a sobering effect.

"All right," he responded cheerfully, and climbed up into the glass blister. He took a quick glance around the celestial sphere. The sun was a swollen ball of fire

set in the ghostly radiance of the zodiacal light. The planets were strewn around the heavens like a string of jewels. Venus was a white pearl . . . Mars was a ruby . . . Jupiter a great yellow diamond . . . Saturn a dull topaz . . . and beyond was the double system of the Earth and moon. A sapphire and another topaz perhaps.

There was a commotion from below.

"Second word coming in from the *Perihelion*," the operator droned. "Here it is . . . *Follow*."

"*Follow* the something," MacAllister murmured. "Now what d'you suppose . . ."

"Have to wait till we hear from the *Equinox*," said Taggart.

From his perch in the astrodome Dale could see the men below, their faces blank and white under the flat fluorescent lighting.

"Third word coming in from the *Equinox*," said the operator. He scribbled something on a pad of paper and handed it to MacAllister.

"*Anomaly*," MacAllister muttered. "*Follow the Anomaly*."

"Now how do you do that?" asked Taggart in deep disgust. "It still don't make sense."

"The *Anomaly*," Fleming repeated. "Sounds as if it might be the name of a ship."

"Never heard of it," said Taggart.

"Me neither," said MacAllister, "but I know somebody who might." He switched on the intercom. "Hey, Chuck, you know practically everything. Ever hear of a ship named the *Anomaly*?"

"Don't believe so." His voice trailed off. "Now wait

a minute . . . Seems to me there was such a ship. It was an old-timer. I mean a real old-timer."

"Well, get up here and tell us what you know about it."

A few moments later Chuck entered the room below, followed by several members of the crew. Chuck wore an air of gravity befitting his position as oracle.

"There used to be a legend about a ship named the *Anomaly*. It was a kind of ghost ship as I recollect. Made a trip far out into space somewhere. Nobody knows what happened to it exactly. The crew all disappeared and the ship went on by itself haunting the spaceways. You're never supposed to see it unless you're way south of the 'cliptic."

MacAllister stared.

"We're way south of the ecliptic now."

"Yeah," said Taggart, bending over the dead-reckoning computer. "We got a Z-co-ordinate of half an astronomical unit right this minute."

There was a brief uneasy silence.

"Follow the *Anomaly*," Taggart snorted. "It still don't make sense to me."

"Got it!" MacAllister cried. "Came to me just like that. It's all perfectly plain."

"It is, eh?" Taggart rumbled from across the room. "Well, then what's the answer?"

MacAllister shook his head. "Can't understand why it took me so long to get it."

"What's the answer?" Taggart bellowed.

"Look at it this way," MacAllister said, evidently enjoying himself tremendously. "We're ordered to a

particular point in space and told to park there for awhile. Now why would they tell us to do a thing like that? Why, because we must be here to meet something. And what would that something be? If you ask me it can't be anything but the *Anomaly*—this ghost ship. Wouldn't be surprised if it was out there now."

"I think I'm beginning to understand," said Fleming slowly. "You mean we're at a point in space which lies on the orbit of the *Anomaly*. The *Anomaly* is scheduled to pass that point very soon. And when it does pass this way—"

"We follow her." MacAllister nodded emphatically. "We follow the *Anomaly* to wherever she's goin'."

"I don't like following any ghost ship," Taggert said hoarsely.

There were murmurs of ascent from the crew. Dale knew that deep-space men were a superstitious lot, but this was the first time he had ever beheld definite evidence of the fact. It amazed him that man who could be so fearless when confronted by a real danger would quail when it came to something unseen.

Taggert stood in the middle of the room looking around him disgustedly.

"Those fellows at Central City got to keep busy someway. They don't have nothing to do but sit at their desks all day and cook up crazy schemes. Somebody heard about this *Anomaly* yarn. Thought it would be a good idea to do a little checkin' up. So he got busy real quick and put it through before anybody with any sense could stop him."

"Sounds reasonable," Chuck agreed.

"What are you kicking about?" MacAllister demanded. "You've already made ten thousand apiece

just by coming this far. According to our contract with the government, all we got to do is stick here for twelve hours and we make another ten thousand."

"Suppose this ghost ship comes along?" somebody objected.

"That's fine," MacAllister replied gleefully. "Then we take right out after it. You get double time for every hour you spend beyond the orbit of Mars and triple time beyond the orbit of Jupiter. How can you make money any quicker than that?"

Dale could almost hear the wheels going around as the men did mental arithmetic figuring their salaries. There was no doubt about it. A man could make enough on this trip alone to keep him in comfort the rest of his life.

"Wonder who'd ever pin a name like the *Anomaly* on a ship?" Chuck muttered. "That name alone would put a hoodoo on it."

"From the astronomical term probably," Fleming remarked.\*

Taggart guffawed loudly.

"I'll bet we never see hide nor hair of this *Anomaly*. Don't think there is any such ship. Don't think there ever was. You've never seen it. I've never seen it. I don't know of anybody's ever seen it. It's just another one of those yarns."

Although some of the men appeared skeptical, no one ventured to disagree. The three partners retired to one of the bunks along the wall for a whispered conference. After a heated discussion Taggart advanced a few steps and held up his hand for silence.

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\* The anomaly is an angle used in determining the position of a planet in its orbit.

"We're campin' here for twelve hours according to the terms of our contract. At the termination of that time if nothin' happens, we'll put in at Mars and then head back for the Earth. If this Flying Dutchman, or eccentric anomaly or whatever-it-is shows up, we'll follow it as per agreement. Now everybody back to their posts."

The men dispersed slowly to various parts of the ship, leaving Dale alone in the astrodome. On Earth he rather preferred being alone, often deliberately shunning the company of others, but out in space it was different. Everything was different in space. On Earth the stars winked in a friendly fashion; they seemed to be alive and no farther away than the hills on the horizon. But out in space the stars were little hard points of light as cold and cheerless as ice crystals.

Suddenly Dale was aware of the awful immensity of space, the dark nothingness stretching to infinity all around him. What mysteries lay hidden out there of which man still had not the slightest inkling: queer stars and matter in strange states, and planets inhabited by organisms whose nature one could not even guess? He took a swift look around to make sure some evil creature was not watching him now, but the only bodies in sight were the *Perihelion* and the *Equinox* a few miles distant. By expending considerable fuel, they had been brought to rest and held at the position designated in the instructions. Now they were nearly motionless except for a slight tendency to fall toward the sun. This was overcome by an occasional blast from the jets.

Dale found himself becoming decidedly bored. He almost wished that some ghostly object would heave

into view just to relieve the monotony. In the early days, authors had written stories of the thrilling exploits of men in space, but the truth of the matter was that most such men lived dull lives, passing the long hours by reading detective stories or mulling over books on how to improve their personality.

Dale was floating around the astrodome trying to keep awake when his attention was attracted to an object in Leo about three degrees from Regulus which he did not recall having seen there a few minutes before.

The object did not resemble a star; rather it gave the impression of having a disk, like a planet or comet. He fixed its position in respect to some faint stars nearby, then watched it intently for a minute. There was no question about it. The object was moving, and fast, too.

He propelled himself over to the six-inch telescope in the center of the room, swung it around toward Leo and began sweeping among the stars. Twice, he caught glimpses of some peculiar-shaped body, but it flashed by too fast for him to catch and hold. He yanked out the eyepiece and substituted one of lower power. Ah—that was better. He started sweeping again when suddenly he stopped with a sharp intake of breath. A spaceship built after the design of a century ago was in the field of view. Her tanks were battered and dented from the impact of the myriads of meteorites that had shattered against their metal shielding, while the personnel sphere was a mere skeleton through which the instrumentation within was plainly visible. There was some lettering upon the sunlit side. Dale gave the focusing screw a touch.

The letters were dim but there was no doubt as to the name—*Anomaly*.

Then Dale deliberately did something that few spacemen in their whole career ever have occasion to do. He punched a button set by itself in a panel on the wall. Instantly bells and red lights went into action all over the ship. It was the master emergency button to be used only in times of dire crisis. Nobody ever punched it unless it was a real emergency. Anyone who might do so for a gag would have had his space-suit filled with itch powder immediately.

Taggart came shooting into the astrodome as if he were equipped with his own propulsion system.

"What's the idea punching that emergency button?" he yelled.

"Just caught sight of the *Anomaly*," Dale said.

"You're crazy!"

"See for yourself," Dale told him, moving away from the telescope.

Taggart took one look. An instant later he was at the intercom shouting orders. The ship began to tremble as its jets went into action. The acceleration began to mount by leaps and bounds. Dale was flattened against the floor. His arms and legs seemed to be made of lead. He had to fight for every breath. By a tremendous effort he managed to raise his head sufficiently to see the instrument panel. The pointer on the accelerometer was creeping up . . . 8g—9g—almost 10g. He weighed half a ton! Just when he was sure he couldn't stand it a second longer, the crushing sense of weight began to ease off. A few minutes later they were coasting again.



Dale managed to pull himself to his feet. He felt dazed and bewildered and his muscles ached painfully as if he had taken a hard beating in the ring.

Taggert squinted at him from across the room.

"You don't look so good," he commented.

Dale moved his head slowly from side to side. The muscles at the back of his neck were so sore he could scarcely turn his head.

"Too much acceleration, I guess."

"Don't call *that* acceleration, do you?"

"It was nearly ten g!"

"Only for a couple of seconds."

Dale faced him indignantly. "The regulations definitely forbid an acceleration above nine g. You can have your license revoked for that."

"I can, huh?" Taggert shoved his face into Dale's. "You'll find there's a lot of things done in space that ain't according to regulations. Furthermore, I don't need anybody to tell me about 'em either."

Dale was about to retort when a wave of nausea swept over him causing him to clutch at the telescope mounting for support. The room began to darken and for one horrible moment he thought he was going to pass out completely. Then the nausea passed, leaving him limp and shaken.

Taggert motioned to a member of the crew.

"Man here can't stand acceleration. Better take him below till he cools off."

"I'm all right now," Dale said, breathing hard.

Taggert eyed him doubtfully.

"You sure don't look it," he said, not unkindly.

"I said I was all right."

Although his head still throbbed painfully his strength was returning rapidly and he could think clearly again.

"In that case get busy and find out where we're going," Taggert told him. He stared through the window at the meteor-riddled hull of the *Anomaly* gleaming white against the stars.

"Are we orbiting freely?" Dale asked.

"Should be by this time."

"Then it won't take long to get an approximate idea of our path in space. I only need to determine our position and velocity."

Dale could feel the eyes of the crew watching his every move with the most intense interest as he went through the operations necessary for the calculation of a preliminary orbit. They became even more intent as he began feeding the data into the calculating machine. It was quite plain that they were following a path far removed from the usual routes of commerce, one that would take them into realms of space where few before them had dared to venture.

With mounting excitement Dale watched the numbers drifting across the illuminated dials of the calculator. Back of those dials a machine was performing the work of a dozen men. Now it was nearing the end. The numbers were moving slower and slower. A green light flashed . . . winked uncertainly . . . then burned bright. The problem was solved.

Dale copied some figures from the dials onto a piece of paper and turned to the captain. Taggert bent over his shoulder eagerly.

"Well, what's the answer?"

Dale encircled one of the numbers with his pencil.

"Of course, this is still subject to considerable error on the basis of such a short arc, but the size of the orbit looks pretty well fixed."

"What do you make it?"

"The semi-major axis is just a shade under ten astronomical units."

"Ten astronomical units!"

"It looks as if we're headed straight for the planet Saturn."

## Chapter 6 *To Saturn*

**S**ATURN!" Taggert's face was grim. "Why didn't they tell us?"

MacAllister tittered nervously. "Probably figured we'd never go if they did. No wonder they offered us all that money."

"Sucker bait!" Taggert snorted.

"Aw, you were as keen on that deal as Fleming and me. Nothing that good had come our way in years."

"We had to take it," Fleming declared solemnly. "We were practically bankrupt. It was either take it or go out of business."

"Remember our motto," MacAllister chuckled slyly, "'we go anywhere!'"

"We didn't mean all the way to Saturn," Taggert grumbled.

Dale was not surprised at their dismay upon discovering their destination. Saturn was the farthest outpost in the conquest of space. Pluto was as much of a mystery as when it was first discovered. Uranus and Neptune were dark hulks revolving in shadowy realms where no man had as yet penetrated. Scarcely more could be said of Saturn. Everyone knew the story of the intrepid Captain Dearborn who had led the first and only expedition to the ringed planet a century before. He had apparently established headquarters on Titan, the largest satellite, and had then attempted to push closer to the planet by establishing temporary bases on Rhea and Dione. But there the record ended. It was as if some giant catastrophe had wiped out the

entire crew without a trace. There were rumors of messages from the ill-fated expedition picked up by spaceships cruising beyond Jupiter, but they were only rumors. If such messages indeed existed, the Department of Space Security had for reasons best known to itself never chosen to make them public. Thus through the years a legend had grown up around Saturn as a world to be shunned, an *ultima Thule* or last outpost, inhabited by ghosts and evil spirits.

Dale was familiar with the stories about Saturn since childhood. In his opinion they were so much exhaust gas. He waited until there was a lull in the conversation among his three superiors before approaching them.

"May I make a suggestion?" he inquired.

"What's on your mind?" asked Fleming.

"If we're headed for Saturn, I can see no point in trailing along behind the *Anomaly*. The ship is simply following an orbit in space like an asteroid and will be going slower all the time as it approaches its aphelion. By expending a little fuel we can reach the planet months ahead of this old wreck."

MacAllister cocked his head to one side.

"Not a bad idea. Get there quick as we can and get it over with."

Fleming nodded in agreement. "Anything against it in our contract?"

"Don't think so," said MacAllister. "Don't think there's a word about it."

They turned inquiring glances on Taggart, who sat staring gloomily at the opposite wall. He rose abruptly and motioned to Dale.

"Get the crew in here, Sutton. Tell 'em I want to make an announcement."

Dale put the order over the intercom. A few minutes later, the men crowded into the room, their eyes turned expectantly on the captain. Taggert waited till everyone was present. After clearing his throat and gulping a couple of times he began to speak.

"Well, men, we finally found out where we're headed. You'll have to believe me when I tell you we took this job sight unseen. I guess you all know the shipping business hasn't been so good lately. So when the government made us this proposition at a good fat rate we weren't in any shape to dicker with 'em."

"In fact, you might say we jumped at it," MacAllister added.

A few of the men smiled but most of them remained with their eyes fixed steadily on the captain.

"We're goin' to Saturn." Taggert paused dramatically waiting for the import of the words to sink in. "You all know what that means. To tell the truth, I don't like it so well myself, but now that we've gone this far, I intend to see it through. If any of you don't want to come along, better say so now or forever hold your peace. You can put back to Mars with full pay to date and no hard feelings. But I'm warning you, we're leavin' for Saturn in another minute, full speed ahead."

Nobody moved. Nobody spoke.

"Well, what's the answer?" Taggert snapped.

There was a stir from the back of the room.

"I'd like to ask a question," a voice piped.

"Then go ahead and ask it," Taggert retorted.

"I've been led to understand this is a government expedition. Is that right?"

"It's an expedition backed by the government," MacAllister corrected.

"I've always heard how the government's got a lot of secret information on Saturn. About it being haunted and all. You got anything on that?"

"Speakin' for myself, I don't know any more'n the rest of you," Taggert replied.

Fleming took a step forward. "It is true that the government turned over to us certain documents which may have a bearing on Saturn. They're in a box secured by a time lock, so I don't know for sure. The lock will be released in a few more minutes. Maybe we'll know more when we get a look at those papers."

Again there was silence while the men shifted position or whispered among themselves.

"Nobody's ever come back from Saturn," somebody muttered. "What happened to 'em out there? That's what I'd like to know."

"Aw, everybody knows it's haunted."

"Personally I don't know what happened to 'em and I don't care," Taggert said. "I also don't care whether it's haunted or not."

"Bet you're scared to death right now," the voice from the rear piped again.

"Who said that?" Taggert demanded, but his voice was drowned in a roar of laughter.

He stood with his arms folded, glaring at the crew.

"All right, so it's haunted," he growled, when the laughter had subsided. "There's lots of places on Earth

supposed to be haunted, only I never seen one. What I'm asking is how many here want to go to Saturn? Everybody who wants to go come on this side of the room with Fleming and MacAllister and me."

Dale walked over beside Fleming. "I'm coming," he announced calmly.

"Our hero," somebody whispered.

"Give us awhile to talk it over," Chuck said.

"I'll give you exactly five minutes," Taggart told him.

The crew went into a consultation while Taggart stood stolidly watching the clock. MacAllister fell to studying the government contract.

Fleming said to Dale:

"I'd like you to help me with those government papers when the time lock releases. Judging from the weight of the box there must be stacks of them. Probably photostatic copies of everything known about the Dearborn expedition."

"I'd be delighted," Dale said.

"Good. We'll have a look at them as soon as we're through here."

"Time's up," Taggart announced. "Well—what's the verdict?"

The men shuffled back into the room with Chuck at their head. Although the cook was a small man he showed no timidity in dealing with the brawny captain.

"Our understanding is we get double time beyond Mars and triple time beyond Jupiter. Is that right?"

"That's right," said Taggart.

"Now how about when we get to Saturn? We ought to get plenty more out there."



"You'll have to ask MacAllister about that," Taggart told him.

"Anything about Saturn in that contract of yours?"

MacAllister ran a finger over the legal document he had been examining.

"You get a hundred extra credits for every day spent on Saturn or any satellites pertaining thereto. It says so in the fine print down here at the bottom of page three."

"Well, in that case I guess we'll stick," Chuck said.

Once the decision was made Dale could not but admire the speed and efficiency with which the men went about their duties. While they did not execute orders in the exact manner he had been taught at the Academy, nevertheless they got things done. For his own part, Dale could not suppress a few shivers as he gave the ship the extra acceleration that sent it speeding ahead to Saturn. In a few minutes the *Anomaly* had shrunk to a gray disk scarcely distinguishable from the stars. Saturn itself was still merely a yellow star, hardly brighter than it appeared from the Earth. Dale knew now how the mariners of old must have felt when they defied the gods and sailed their frail barks beyond the Gates of Hercules. Viewed from a distance of a thousand years, their fears of running over the edge of the world or of being devoured by slimy monsters of the deep seemed childish, until you were face to face with the same type of situation yourself.

"How about taking a look at those papers now?" Fleming called.

"Be right with you," Dale told him, making a final adjustment on the pilot.

Dale followed Fleming to the lowest level of the

personnel sphere where the main electrical switch-board and storage cupboards were located. Fleming opened one of the cupboards and removed a large aluminum case with magnetized steel strips on the sides and bottom. He set the case on a metal ring in the center of the room and motioned for Dale to sit down. There were three dials on the top of the case which indicated the days, hours, and minutes. Fleming compared the time on the dials with the chronometer on the wall.

"This gimmick should unlock itself any moment now if I read this correctly."

Dale watched the minute hand impatiently. He felt like an archeologist waiting outside some ancient tomb containing the half-guessed secrets of another age. Although he had read about Captain Martin Dearborn ever since he could remember, the man seemed more like some mythical character, such as King Arthur or Robin Hood, than a real life-and-blood person. Despite the fact that Dearborn had lived in period that reveled in publicity he had somehow managed to remain an aloof, shadowy figure, a personality whose adventures were familiar to millions, but whose face would not have been recognized outside a close circle of intimates. There was something wrong with every photograph of Dearborn Dale had ever seen. If his face wasn't turned from the camera or in shadow, the print was blurred or defective in some way. Some said it was done deliberately to heighten the mystery surrounding his personality. Others claimed it was due to an abnormality of the palate over which he was unduly sensitive. Whatever the reason, the fact re-

mained that Dale would have been unable to recognize the man if he had met him on the street.

There was a buzzing noise followed by a metallic click from within the box. Fleming gingerly touched a knob on the side of the case. The top flew open, revealing the shining steel-lined interior filled with papers and letters. Dale regarded them fascinated—like a hungry man before a rich feast.

"Suppose you go over these"—Fleming divided the papers into two stacks roughly equal in size—"and I'll see what I can make out of this bunch."

Many of the documents were of minor interest, consisting chiefly of records similar to those which might have been made for any lengthy expedition into space. Yet even in these routine reports Dale could not but marvel at the courage of a man who dared to embark on such a journey under the primitive conditions prevailing a century before. He smiled at the curious old drawings of the spacesuits with their numerous wires and tubes and their accordion pleats that made a man look more like an armadillo than a human being. Gradually out of the mass of correspondence the picture of Dearborn himself began to emerge, the picture of a man who was an odd mixture of scientist and big-business promoter with a dash of mystic thrown in. Time and again the project would have collapsed had it not been for Dearborn's genius for organization and intuitive knowledge of science. Above all he had that rare ability to impart his enthusiasm to others. As Dale read on, his own enthusiasm mounted page by page. He forgot that these men had died long ago, and found himself living and suffering with them as they met and overcame one obstacle after another.

Perhaps the most remarkable part of the journey to Saturn and the landing on Titan was its complete lack of incident. Everything went off exactly according to plan. The mere fact that Dearborn was able to reach Saturn upon his first attempt was enough in itself to make his name secure in the annals of interplanetary travel. Yet this trip of more than a billion miles was completed only five days behind schedule and without the loss of a single life.

The last paper consisted of a transcription of Dearborn's own account of life at the base on Titan. Dale read with breathless interest. The man's personality was stamped like a living force on every page. The further he read, the more he became possessed of the conviction that somehow Dearborn still survived. It seemed incredible that any man with such a fervent desire to live could ever vanish from the world like an ordinary mortal. The thought had no more crossed his mind than he rejected it as absurd. Dearborn must have been about forty when he wrote the diary, which would make him one hundred and thirty-nine today. Dale had heard there were authentic records of men who had attained such an age but not very many, especially under the hardships they would have to endure on a desolate outpost like Titan.

The first days on Titan were filled with dangers and difficulties aplenty but they had been mostly anticipated in advance. Thus, on the whole, the little colony never suffered severely.

"I don't know how we would manage without George Beebe," Dearborn wrote. "That man can do anything from baking a pie to building a retaining wall. He is everywhere. I declare I don't know when

he sleeps." Again, ". . . the heating units went off for nearly twenty minutes but we had them repaired before the temperature dropped below 30° F. A few of the women became alarmed but most of us came through pretty well. With good luck the underground quarters should be finished in a day or two. We should be quite snug down there."

If there were hardships in living on a planet never before inhabited by man there were also some advantages. Despite the unnatural conditions under which the colonists had existed they were singularly healthy. "The planet must be completely free of pathogenic organisms, more sterile even than the instruments used in the operating room. If we remain here many years we will lose all our resistance to disease germs. Perhaps we should include strains of bacteria on our next trip lest we fall an easy prey when we return to civilization."

The next few entries were exultant. "We are progressing even faster than the most optimistic dared to hope. Best of all, everyone is in fine spirits. After dinner in the main hall we sing songs and have square dancing. These people are wonderful. So far not a single quarrel worth mentioning. Have to thank Dr. Reiber for his splendid work in analyzing these men and women . . ."

And then came disaster—the first man vanished!

"Beebe has disappeared from Titan as effectively as if he had been projected from the surface with the velocity of escape. The most thorough search has failed to reveal a clue. His disappearance has had the most depressing effect upon us all. None of the usual laughter and singing at dinner. The hall is unnaturally

quiet. Each man sits close to his neighbor as if fearing he would be gone if he turned his head. Beebe will be sorely missed. Let us hope he may yet return with the coming of day."

From there on the diary was the record of a steadily losing battle against the unknown. One by one, then by twos and threes the little party faded away. There were a few who strove valiantly to continue the work but they were powerless to arouse the others from the state of numb terror to which they had succumbed. Eventually they could no longer work or think but only huddle together wondering dully who would be the last to go.

Dearborn, like the others, was at first inclined to be suspicious of someone within the group, but as the disappearances continued, it became obvious that they were the victims of some force outside their usual experience. But Dearborn, unlike the others, never gave way to rage or despair. Rather his scientific curiosity was aroused.

"There is a reason for everything. When the reason happens to lie outside our present boundaries of knowledge, we are apt to lose our heads and indulge in the wildest speculations. Thus even the sanest of our party have invoked everything from witchcraft to demonology to explain these disappearances. Yet in my own mind I am convinced that this problem can be solved by the same methods that have been applied with success to others equally baffling. Certain evidence . . ."

Here the diary ended. Dale sat for a long time lost in thought and hardly conscious of his surroundings. Heretofore he had always scoffed at the legend of the missing men of Saturn, but now that he had read a

transcription of the event as set down by a trained observer, he was more disturbed than he cared to admit. Dearborn was a strong, resourceful man yet that had not been enough to save him from the same fate as the others. Was it possible that this malevolent force, whatever it might be, could still be operating on Saturn?

He was aroused from his reverie by Fleming's attempts to capture some papers that had floated from his sphere of influence.

"Here's a photograph of the captain," Fleming said, tossing one of the papers carelessly across the room. "Take a good look at him and tell me what you think."

At last, a photograph that was free of shadows and blemishes! So that was Martin Dearborn? Black hair brushed straight back from a high, prominent forehead. Deep-set eyes betokening intense powers of concentration. A nose curved like a hawk's. An upper lip that was twisted, giving the face a wry diabolical expression not easily forgotten.

The photograph had apparently been snapped while Dearborn was looking straight into the camera, for the eyes followed Dale relentlessly wherever he moved.

"Well, what do you think of him?" Fleming inquired.

Dale shivered.

"It sounds crazy, but somehow I've got a feeling that man is still alive."

## Chapter 7 *Camp Dearborn*

MACALLISTER flattened his nose against the window. "How're we doing?" he asked.

"Pretty well," Dale replied from his usual station by the instrument panel. "We ought to reach the orbit of the outer satellite, Phoebe, in a few minutes."

"Only nine million miles out now, huh?" The man chuckled softly. "Sort of like getting inside the city limits, you might say."

Dale nodded absently. "How's Saturn?"

"Just beautiful."

"How're the rings?"

"Still there, I guess." He squinted through the window as if straining his vision to the limit. "I can just catch a glimmer of 'em now and then. Just a thin, ghostly glimmer."

"Better go easy on that ghost talk," Dale warned him. "The crew's got the jitters already."

MacAllister laughed scornfully. "That's spacemen for you! They never had it so good in their life and here they are worryin' about ghosts. Well, they wouldn't be happy if there wasn't something to worry about." He applied his nose to the window again. "Don't see anything of Phoebe yet."

"We're inside its orbit now," said Dale consulting his chart, "but Phoebe is away around on the other side of Saturn."

"I thought it must be over there someplace." The



man's brows contracted in thought. "These satellites worry me a lot more than this ghost business. Saturn's got eleven satellites going around it that we *know* about. But how many more d'you suppose it's got we *don't* know about?"

"Wouldn't be surprised if there were dozens of 'em," Dale replied cheerfully. "Mavericks so small nobody's spotted them yet."

"What d'you mean by small?"

"Oh, a body about the size of Mount Everest maybe."

"Gosh! I should have taken out insurance."

"Trouble is we aren't even sure where the old-timers are—the satellites that were discovered three centuries ago," Dale added. "Nobody bothers to keep close track of them."

"Hey, something coming at us now!" MacAllister yelled.

Dale rushed to the window. Three bodies shaped like irregular white stones were rapidly nearing the ship, rotating on their axes as they flew side by side through space as if they were alive. The ship appeared to be moving straight toward them. They grew momentarily, and in a minute loomed ahead like mountains.

"Do something!" MacAllister cried. "We're going to crash!"

"Too late now," Dale said.

"There must be something—"

"Try holding your breath."

Just as collision seemed certain the bodies began to fall away from the ship. Dale's stomach felt as if he had hit the bottom on a long roller-coaster dive.

"What in the name of creation was that?" MacAllister gasped.

Dale gazed after the bodies dwindling in the distance.

"If I'm not mistaken those are the Three Fates."

"The Three Fates?"

Dale nodded slowly. "Captain Dearborn said in his diary that he met three such bodies when he entered the Saturnian system a century ago. He named them Clotho, Lachesis, and Atropos."

"Weren't they some kind of old women?"

"In Greek mythology they were the Three Fates. Clotho was the one who spun the thread of life. Lachesis determined the length of each thread. And Atropos was the one who cut it."

"I don't like any of 'em," MacAllister whispered.

"I don't like the looks of them myself," Dale admitted.

He walked to the instrument panel and touched the button which controlled the lower steering jets. As the jet went into action he watched the accelerometer closely as the needle crept over the dial. When the needle indicated 3g, he began to ease off smoothly until the dial stood at zero again.

Taggert stuck his head up over the floor railing. "Did you see that asteroid we just missed?"

Dale nodded glumly. "I'm climbing out of the satellite zone now. Less chance of getting hit."

"You should have thought of that a long time ago."

"I'm just beginning to realize that fact."

"Where you headed for now?"

"I'm going over the north pole of Saturn and con-

tact Titan in longitude  $216^{\circ}$ . Less chance of collision that way." \*

"It's about time." With a sidelong glance at MacAllister he disappeared into the astrodome.

For the next hour Dale was busy at the instrument panel with some calculations while MacAllister lay floating by the window. Presently Dale laid aside his magnetized pencil and glanced inquiringly toward the window.

"How does Saturn look now?"

MacAllister clucked admiringly. "Say, those rings are worth the price of the trip alone. We'll run regular excursions over the pole when we get established here."

Dale slipped down beside him. The rings were indeed a gorgeous sight. He had seen the planet through the 100-inch telescope on the *Roris Sinus* when the ring system was tilted toward the Earth by its maximum amount and had never forgotten the sight, but that was as nothing compared with the scene spread out below him now. It was almost too perfect to be real. Saturn was a pale yellow globe streaked by dusky belts, the lightest and broadest encircling the equator, then alternating in shade to the polar caps which were the darkest regions on the surface. And the rings! Every tiny division stood out as sharply defined as the lines on an engraving, so sharp that a cosmic giant could have cut his fingers on them. Those rings looked so solid and substantial. It was hard to believe they

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\* Most of the satellites of Saturn revolve about the planet in the same plane as the rings, as if Saturn were a ball floating in water and the satellites moved about it on the surface.

were all illusion. That if you came closer they would resolve into a thin sheet of ice particles.

"You know there's something I've always wanted to do," MacAllister said, gazing wistfully at the rings.

"What's that?" said Dale.

"I've always had a yen to get into my spacesuit and run around on those rings. Always seemed to me it would be a lot of fun."

"Better be careful," Dale advised. "You might find it was like being hit by a hailstorm."

They had passed over the north Saturnian pole and were beginning to decelerate gradually into the satellite zone again. The rings were growing narrow while the belts along the planet's equator were becoming more clearly visible.

"Say, what's that thing on the equator there?" MacAllister exclaimed, sitting up suddenly. "Looks like there's a leak about where the shadow cuts across the rings."

"Something has broken loose," Dale agreed. A brilliant white spot had appeared suddenly on the planet in about latitude 20° N and was spreading rapidly. "Must be a volcanic eruption below the cloud layer."

"Old Saturn isn't dead yet," MacAllister said, in a husky whisper.

"Think what an eruption it must be," Dale mused. "That white spot is bigger than the whole Pacific Ocean."

MacAllister shuddered. "Lucky our contract doesn't say anything about landing on Saturn."

"Are you sure?"

"I just looked before I came in here."

They lay for several minutes in silence contemplating the outburst.

"Well, I sure hope Titan has quieted down," MacAllister sighed.

Dale glanced at the clock. "We'll know in a few minutes."

"Which one is Titan?"

"It's that big crescent moon over there toward Scorpio," Dale said, giving himself a shove toward the instrument panel. "We'll be over it in a few minutes."

"Are you going to land?"

"Not right away. We've got to find Camp Dearborn first."

MacAllister studied the disk of Titan growing ahead. It was beginning to show markings—white and dark patches and the hint of shadows along the terminator.

"Camp Dearborn," he repeated. "It's like going back in time a century."

"Except that we know a few things Captain Dearborn didn't know," Dale said.

"Yeah." MacAllister licked his lips. "They say forewarned is forearmed."

But his eyes were anxious as he gazed at the world that was soon to be their home.

## *Chapter 8* *In the Dark*

DALE almost laughed out loud at sight of the old-fashioned rocket ships. The spherical central body perched high upon the long spidery landing supports made you think of a daddy longlegs poised for flight. At any moment you expected to see it go scurrying off across the icy wasteland that was Titan. It was hard to believe that such crude affairs had once been considered the last word in deep-space rocket design. Yet they had rendered good service in their time. The improvements made in the last century had come mostly through refinements in technique rather than the application of new principles.

Well, the ships remained apparently just as Captain Dearborn had left them the day he disappeared. The surfaces showed no sign of damage either from corrosion or meteoritic impact. In the intense cold, chemical action upon the meteor-bumper skin had proceeded too slow to be apparent, even after a hundred years. And the envelope of methane, argon, and neon surrounding the planet, although more rarified than the air upon the highest mountain top on Earth, still was sufficient to provide effective protection against meteorites.

"Number nine—Dale Sutton."

It was Fleming's voice crackling in his earphones. Ever since they had landed an hour ago there had been a stream of conversation back and forth, but this was the first time his name had been mentioned. He

glanced at the identification slip attached to his arm. Fleming was number five.

He held up his hand. "Over here, number five."

"Come here a minute, number nine," Fleming called back. "I'd like to get straightened out on this planet."

Dale spotted Fleming on a ledge of rock about a quarter of a mile away. He waved and headed for him, bounding over the ground in long leaping strides. Gravity felt about the same as on the moon, which meant that if he weighed 150 pounds ringside on the Earth he must weigh about 25 pounds on Titan. Yet even 25 pounds felt heavy after the long days of weightlessness in the *Albatross*. He dreaded the thought of returning to Earth. He never would be able to stand it.

Fleming caught him by the arm as he leaped up the eight-foot ledge of rock.

He grinned. "I can't tell whether the sun is rising or setting over there. Which way is east and west in this place?"

"Tell you in a minute," Dale said, glancing up at the purple sky. "According to Dearborn the north star of Titan is *Gamma Cephei*. Now let me see . . . There's the Little Dipper and there's Polaris and that third magnitude star right close to it should be *Gamma Cephei*."

Fleming gazed in the direction Dale pointed, shading his eyes from the sun.

"Not much of a north star," he commented.

"Sorry, but I'm afraid that's the best I can do," Dale told him.

They grinned at each other. Dale had become close

friends with the older man ever since their conversation over the shirt episode.

"Now how about the sun?" Fleming said.

Dale stood facing *Gamma Cephei* with his arms extended from his body.

"If I stand facing north everything is the same as if I were back home on the Earth. East is on my right and west is on my left. And since the sun is on my left that means it must be setting."

Fleming scowled through his view window.

"I was afraid of that. What's the rotation period of Titan?"

"Sixteen days—the same as its period of revolution around Saturn."

They turned toward the pale sun skirting along the western horizon. Dale contemplated it thoughtfully.

"From its rate of motion I'd estimate it's about ten hours till sunset."

Fleming started down the side of the ledge.

"I was hoping we could get into those old underground quarters of Dearborn's before nightfall," he said. "Let's find Taggert and MacAllister and have a look at it."

They discovered that Taggert and MacAllister, with several members of the construction crew, had already started to investigate. The former base had been built by tunneling into the foot of a cliff that rose abruptly from the plain upon which the rockets had landed. The men stood clustered together in a little group surveying the entrance dubiously. They started visibly as Fleming and Dale came up.

"What do you think?" Fleming asked. "Can we get in there?"



Taggert gave the wheel that operated the air lock a tentative kick.

"Depends on whether this thing works or not," he said.

"Have you tried it?"

"Not yet."

Fleming glanced at the sun. "It would be a good idea if we could get in there before nightfall."

Taggert, without a word, seized the wheel with both hands as if he were a wrestler applying a hold, and gave it a violent twist. To everyone's astonishment the wheel yielded at once. The hatch flew open revealing the smooth, shining, cylindrical interior.

Taggert turned the wheel back and forth, regarding it suspiciously. "Sure worked easy," he grunted.

"Almost too easy," MacAllister added.

"Yeah," said Taggert, rising to his feet, "almost as if they'd fixed it for us ahead of time."

Nobody spoke for a moment. MacAllister described a semicircle in the snow with the toe of his boot. "We should have been more careful around the entrance here," he muttered.

Taggert glanced at him sharply. "What d'you mean, careful?"

"Well, if there *was* somebody here ahead of us we would have seen their footprints."

Taggert snorted. "Now who could have been ahead of us?"

"How do I know?" MacAllister retorted. "I just said if there *was*."

"I doubt if you would see any footprints unless they were made quite recently," Fleming said. "This methane snow probably evaporates during the day

and is carried around by the wind and deposited on the other side of the planet. You can feel a breeze stirring now."

The men looked around apprehensively. Saturn was a monstrous sickle in the sky cut by the fine white line of the rings. The eastern horizon was a deep purple as if a thunderstorm were approaching.

Chuck got down on his knees and squinted into the open hatch. "It would sure be great if we could get in there," he said. "I'm tired of being cooped up in that old tincan of a spaceship."

"Old tincan!" Taggert protested. "The *Albatross* was completely overhauled a year ago."

"I still say it's an old tincan," Chuck replied calmly.

"This isn't getting us anywhere," Fleming broke in. "Are you going inside there or are you going to stand out here talking about it the rest of the day?"

"Don't crowd, folks," MacAllister warned humorously.

Dale noticed several of the men eying him as if they expected him to be the first to volunteer. Although he was anxious to see inside, he felt that he had in the past antagonized the men by putting himself forward too often. This time he decided to remain in the background and let someone else lead the way.

"Well, what are you all afraid of?" Taggert burst out. "I'm goin' in. Be seein' you."

He crawled headfirst into the narrow opening, the hatch clapped shut behind him and he was gone.

A minute is a long time when there is nothing to do but wait. At the end of ten minutes Dale felt that he had been waiting outside the air lock for half an hour at least. He had about concluded that Taggert

had followed Captain Dearborn into the unknown, never to return, when the hatch flopped open and Taggart crawled out, seemingly none the worse for his experience.

"See any ghosts?" MacAllister inquired.

"Sure," Taggart replied, glancing around scornfully, "the place is jammed full of ghosts. I had to kick 'em out of the way so I could see where I was goin'." He addressed himself to Fleming. "Everything looks pretty good inside except none of the switches work. I couldn't have seen a thing without my flashlight."

"What would you recommend?" asked Fleming.

"I'd recommend we get the electricians in there and see if we can get some juice flowing. If the generator's busted maybe we can get by with the batteries for awhile."

"Sounds good," Fleming agreed. "I'm like Chuck—tired of living in that spaceship, too."

Taggart and a couple of electricians went inside while the rest of the crew began removing the long cylindrical hold from the frame of the rocket ship for use as a temporary shelter. Dale for the moment was left at a loose end. There was no one to whom he could talk. With the sole exception of Fleming, the men still treated him as an outsider, and he had given up making advances. After offering his services several times in the construction work and being rebuffed, he wandered off by himself, and at length strayed back to the entrance to the underground living quarters. He was strongly tempted to go inside on his own and have a look around. In detective stories it was always the bright amateur sleuth who

cleared up the mystery. Perhaps it would work that way for him, too.

He found Taggart and the electricians hard at work under some floodlights at the end of the chamber opposite from the air lock. Judging by the remarks emanating from beneath their helmets, the power situation left much to be desired. Beyond an occasional glance in his direction and a few low words among themselves they left him alone to prowl about as he pleased.

The room had evidently been used as a machine shop for making minor repairs about the encampment. Expensive tools were strewn carelessly around on benches and even on the floor, as if the occupants had left them where they had fallen. Dale found several notes on a clip by the door calling the engineer's attention to defects in the electrical and mechanical equipment. "Relay stuck on thermostat in Darkroom 3. Hank." "Will you take a look at the bake oven? Can't get temperature above 200°." One slip of paper seemed to be concerned with finances rather than repairs. "IOU \$4.67. Joe." Dale wondered absently if Joe had disappeared before he had paid up.

His flashlight picked out a circular stairway in a corner of the machine shop. He followed it to a large chamber on the floor above furnished with tables and chairs. This was apparently the dining room and assembly hall Dearborn had referred to so frequently in his diary. The social life of an isolated community was one of the most important factors in its success. Men and women were not robots; they could not devote all their time to gathering minerals, measur-

ing the planet's magnetic field, and setting off artificial earthquakes. How this room must once have rung with song and laughter! Then the blight had struck; their voices had been hushed as fear stalked the community night and day.

There were two long tables side-by-side near the railing leading to the stairway. Dale walked around them several times, examining the floor and benches intently in the hope of finding some object of interest, but the room was disappointingly bare, as if someone had removed every evidence of human occupancy with scrupulous care. Dale was about to leave, feeling that he was a decided failure as an amateur sleuth, when his flashlight struck something white against the wall. He picked it up. It was a piece of scratch paper scribbled over with notes and mathematical symbols. It was impossible to decipher the writing but one fact was incontestable: the writing was the same as that in the photostat of the diary.

Dale placed his lamp on the table where he could study the paper to better advantage. Some of the mathematical expressions looked familiar. This string of symbols certainly must be Bernoulli's equation, and the bunch of partial differentials appeared to be Laplace's equation for the magnetic potential in spherical co-ordinates. And here were the equations for the velocity of longitudinal and transverse waves through a medium. At the bottom were some notes. He moved the lamp closer and read: "... a possible modification of space itself . . . like waves through Earth's core . . ." It ended in a long scrawl.

Dale sat staring into the darkness, his mind in a whirl. This was doubtless the very room in which

Dearborn had met his end. The mysterious disappearance of his comrades must certainly have occupied his mind to the exclusion of everything else. Therefore these mad scribblings must also represent his last thoughts. Dale recalled the final words in his diary, "Certain evidence . . ." But what evidence could he mean? Was it possible that Dearborn had some idea concerning the physical principle involved in the disappearances which he expressed by means of these equations? But how could such a mystery conceivably have any connection with the Earth's core?

Dale was so absorbed in the paper that it was some time before he noticed that his lamp was fading. He seized it, flipping the switch on and off, but without result. That was strange. He was sure he had put in a new battery only recently. The light was fading rapidly. He had to get out of there quick before it vanished entirely. He started for the stairs but he was too late. The light expired, leaving him in total darkness.

For the first time in his life Dale knew panic. He felt as if the darkness were pressing against him. It was a dense black fluid . . . he was drowning . . . suffocating in it. By some disturbance of the optic nerve it seemed as if he could even see the darkness. He tried desperately to fight down his mounting hysteria but it was like trying to stem a rising tide. He had only one thought, to get out of the room.

He forced himself to sit very still with his hands pressed hard against the edge of the table. After a time some degree of reason returned. He was able to concentrate again—to think. He concentrated upon the room until a clear picture of it formed in his mind.

There were the two tables, and there was the railing around the entrance to the circular stairway, not five feet away from the table next to the one where he sat. If he moved to the end of this table, then over to the other, it would be impossible to miss the stairway.

He rose and began groping his way across the room, keeping one hand against the edge of the table as a guide. It seemed extraordinarily long, as if he would never reach the end. An idea occurred to him. He cut a notch in the side of the table with his clasp knife, then began groping his way through the dark again. After several minutes he gave a cry of vexation. It was as he had suspected! In his overwrought state of mind, he had missed the corner of the table, instead, going entirely around it.

When he was calmer again he felt for the side of the table, found it, and began following very carefully this time, trying not to miss an inch. Eventually he came to the corner. The second table should be within easy reach. Ah, there it was. He slid along a few feet until he reached another corner. Now the railing around the circular stairway could not be more than five steps directly to his right. This was the crucial moment. He stepped boldly into the dark, counting as he went. At the count of five he stopped and began pawing the darkness at about the level of his waist. The railing should be directly in front of him. It must be! For several tumultuous seconds he felt only nothingness. Then his fingers closed over some smooth resilient substance. The rubber lining of the railing, he thought. In a few seconds more he would be downstairs with Taggert and the electricians.

There was something peculiar about the railing. It seemed to be moving. He tightened his grip but it twisted out of his fingers with a swishing sound. He lunged for it frantically but there was only emptiness around him. Then, something closed about his chest, something hard but with a little yield to it, like the muscles of a man's body. He tried to struggle free but he was helpless in that iron grasp. There were two bands around him, pinning his arms to his sides. They were dragging him across the room. A wild thought flashed through his mind. Perhaps this was the way men disappeared. And he was the first to go!

Dale dug his feet against the floor and exerted every ounce of his strength to break that hold. If anything, the bands only tightened around him. In his desperation Dale remembered a trick the boxing instructor at the Academy had shown him. It was an old dodge but sometimes worked when you were up against a stronger opponent. Instead of resisting he suddenly let his body grow limp. For an instant he felt the hold on his arms relax. With one motion Dale wrenched himself free and took a quick step backward. He missed his footing . . . felt himself falling . . .

He went head over heels down the circular stairway and emerged headfirst at the bottom like a boy coming down a slide on his stomach. It would have been a disastrous fall on Earth but on Titan, thanks to the low surface gravity, he only bounced lightly a couple of times before coming to rest.

Dale sat up and took stock of himself. He felt bruised and slightly bewildered and the antenna on his walkie-talkie was bent double. Otherwise he seemed to be in pretty good shape.



Wait a minute! Something peculiar was going on. Now what was it? Suddenly it dawned. His flashlight was working again. The lamp was burning strong and bright.

Taggert and the electricians came shuffling up behind him. Taggert regarded him with a puzzled expression.

"What are you doing down there—playing jacks or something?"

Dale tried to rise but one leg buckled under him and before he could catch himself he was down upon the floor again.

"I'll give you a lift," Taggert said.

He seized Dale under the shoulder and yanked him to his feet. The muscles of his arm were as hard and unyielding as the jaws of a vise.

## Chapter 9 *The Intruders*

[VEN the pale Saturnian sun seemed dazzling after the blackness of the underground quarters. Dale was astonished at the transformation the construction crew had wrought during his absence. He had hardly been gone an hour, yet the long silo-like tanks from the supply ships were in place on the ground, and connected for electricity and air conditioning. Although considerably larger than the sphere in which they had been living, the tanks were still not exactly commodious.

Taggert and the electricians were besieged by questions the moment they joined the crew.

"Well, what luck?" Fleming asked.

Taggert shook his head regretfully. "Looks like we'll have to park in these tanks for quite awhile yet."

"Electrical fixtures wouldn't work, eh?"

"They wouldn't work for us anyhow. We'll have to get along on the batteries till we can hook onto the atomic pile."

"Any notion how long it'll take?"

Taggert turned to one of the electricians. "How about it, Ken?"

Ken seemed reluctant to commit himself.

"Hard to tell. Might be a day, might be a week."

"I'd rather not use our atomic system if we can avoid it," Fleming remarked, gazing at a ship a considerable distance from the others, and readily distinguishable by its bright red-and-white markings. "Always danger from radioactive contamination of

course. I presume the pile Dearborn used is adequately shielded?"

"Seems to be," Taggert said. "We didn't record anything that would add up to more'n a tenth of a rem\* a week."

"Should be safe," Fleming agreed. "Well, shall we call it quits for now? Chuck should have something hot to drink by this time."

They were starting toward the tanks when MacAllister intervened.

"There's one other little job hasn't been 'tended yet."

"Now what?" Taggert growled.

"We've got to get the guns and ammunition out of the ships and into the tanks before we can turn in."

Taggert turned away with a gesture of disgust. "Get 'em in next time. I'm tired."

"Can't," MacAllister said firmly. "The contract specifies they gotta be ready and accessible at all times."

"It does, ch? How's anybody goin' to know way back there in Central City?"

"Somebody always blabs."

"I think MacAllister is right," Fleming observed. "It will only take a few minutes to transfer the guns to the tanks. Then we'll have complied with all our obligations, besides feeling easier in our minds."

"Okay," Taggert groaned. "Come on everybody and grab a gun."

The guns and ammunition were distributed among the men, who received them without much enthusiasm

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\* Roentgen equivalent man, a term used in measuring radiation hazards.

for the most part. They were civilians, unfamiliar with the use of arms, and who had no particular desire to improve their acquaintance. Dale was surprised at the number of high-class weapons in the shipment. The entire compartment in one of the cargo ships was filled with ammunition alone. Although there was some grumbling at the extra work, nevertheless Dale noticed that each man guarded the weapons assigned to him jealously and gazed with more assurance at the dark shadows creeping around the edge of the cliff.

Dale found a dozen spacesuits already dangling from the pulleys overhead when he entered the new living quarters. He hastily stripped off his protective shell and was examining his helmet for possible leaks when another member of the crew crawled through the hatch. Dale's lips set in a hard line at sight of the number on his sleeve. Twelve—that was Collins. Well, they had to meet sometime. Might as well settle it now.

Dale noticed with satisfaction that Collins was taking an extraordinary amount of time getting out of his suit, fumbling with his slide fasteners and nosing around his locker at great length. Quite obviously he had no desire to meet him alone either. Dale continued calmly inspecting his helmet. He was enjoying himself immensely. This time, he told himself, their meeting would be slightly different from the last.

It became impossible to ignore the other's presence. After several exploratory glances in Dale's direction Collins sidled over closer and grinned down at him bashfully.

"Have an accident?" he inquired.

"Tried to make a clothespin out of my aerial," Dale replied.

Collins examined the injured antenna. "Looks as if the rod was broken where it goes into your set. Come around to the storeroom and I'll fix you up with a new one."

"Thanks."

It was over so quick Dale could hardly realize it. For days, he had been saving up bitter, sarcastic remarks for Collins, to be delivered at the first favorable opportunity. Now the opportunity had come and he hadn't said a one of them. Probably he never would.

They entered the commissary together and sat down side by side at the table. Nobody gave the slightest indication that anything unusual had happened. Yet every man in the room knew in an instant that relations had changed between Collins and Sutton. They had patched up their quarrel and were on speaking terms again.

As they casually exchanged remarks over their dessert, Dale wondered if Collins could be the same person he had hated so intensely only a few days before. When you got to know him, he wasn't such a bad sort at all. Doubtless Collins had held a wrong idea about him, too. Dale squirmed inwardly when he thought of that Perseid pin. What an awful show off he had been! But he hadn't meant it that way. How much simpler everything would have been if they could have understood each other from the first.

Dale also noticed a difference in the attitude of the other men. They were more inclined to include him in the conversation; several times his opinion was

asked on such weighty matters as the relative merits of various comic strips and whether a cheetah could run faster than a jack rabbit!

The conversation had drifted around to personal experiences. Chuck was relating a harrowing encounter he had had with a meteorite on the *Mare Numbium*. The body had chased him with the uncanny instinct of a guided missile, and was gaining rapidly, when he managed to escape by suddenly reversing his field. Dale had been listening half-asleep when some chance remarks from Ken and Taggart in the corner behind him brought him sharply to attention.

"Can't understand what was the matter with that switchboard," Ken said. "I thought we were all set when everything went dead. Even our own lights wouldn't work."

"I couldn't understand it either," Taggart admitted.

"When the switchboard went dead, I naturally figured you'd pulled the main switch in the other room."

Dale had been keeping a close eye on the captain, but, except that he was somewhat quieter than usual, he had done nothing to indicate that he was the antagonist with whom he had grappled in the dark. But the fact that Ken and Taggart had been separated for awhile was at least suggestive.

"I never got near the main switch," Taggart declared. "The lights went out before I even got to the door. Sure was dark."

"I don't understand about those lights," Ken muttered.

"Aw, it's those rotten connections," Taggart complained. "That's what comes of buying our electrical

equipment from the dime store instead of the Central Scientific Company. I told MacAllister so a year ago."

The lights blinked twice, the signal to retire. Some of the men groaned but most of them were glad to get to bed. One of the worst features about sharing common quarters was that each individual had necessarily to suit his actions to the crowd. In the underground headquarters, there was sufficient room for each man to have a little nook of his own, where he could read late or turn in early if he desired. Dale went to bed feeling happier than at any time since he had joined the outfit. He had that wonderful sense of belonging; of being among common friends. Even his battle in the dark didn't seem quite so terrifying. Yet those bruises on his arm were still sore. It seemed impossible that it could have been Taggart. He knew the man was strong but hardly *that* strong. If it were the captain, he had outwitted him at any rate. But would he be so lucky the second time? He shifted uneasily under the bedclothes, wondering if there would ever be a second time. He wished he could go to sleep the minute he hit the pillow like Chuck over there. Some fellows didn't have any nerves at all.

Dale was aroused by a persistent rattling sound. The room was so dark that for a long time he couldn't be quite sure he was awake. MacAllister had left a 40-watt lamp burning in the corner and in the next room. This provided ample illumination to enable one to move about readily. Now the glow from the lamp was so weak as to be scarcely visible. Yet there was enough light for Dale to discern several dark forms flitting back and forth beyond the door where their suits were hung. Another black shape was creeping

about among the beds. The others appeared to be beckoning to it.

A yell split the silence. It started as a hoarse cry and ended in a shrill screech. Dale caught sight of a form hastily scurrying across the room, a form like that of a man in a spacesuit, only somehow strangely different. He distinctly heard the creak and snap of the air lock. The light faded away to invisibility, then came up strong and steady.

Chuck was sitting up in bed gazing wildly about. His red-striped pajamas might have belonged to a comedian in a slapstick comedy, but he didn't look as if he were playing a comedy part now.

"One of 'em bent right over me," he gasped. "He was so close I could see his eyes staring down at me."

There was a chorus of groans from around the room.

"Tell us about that meteor again."

"Quit reading those mystery stories."

"Go sleep in the kitchen."

Chuck glared at his tormentors.

"I tell you I could see his whole face. I could see it right through his helmet."

MacAllister waved his hand for silence. "Now just what do you mean—helmet?" he asked.

"What do you think I mean?" Chuck retorted. "I mean his helmet . . . the thing he had over his head."

"And you could see his whole face?"

"I sure could."

"But you can't see your whole face through a helmet," MacAllister shouted. He surveyed Chuck triumphantly, his arms folded like a lawyer who had trapped a witness into a confession of guilt. "You can't see nothing but your eyes."



There was another chorus of groans from around the room.

"I could see this guy's face all right," Chuck declared, "because he didn't wear a regular type helmet. He had a helmet with a big window in front like they wore a long time ago."

Silence descended abruptly over the throng. There was an ominous note in Chuck's voice that carried conviction.

"Did you see anybody else around?" MacAllister inquired, confidence in his ability at cross-examination somewhat shaken.

Chuck ran his hand over his face. "Seems to me there was somebody out in the entry room but I couldn't be sure. There wasn't hardly any light—"

"There wasn't any light?"

"That's right, the light almost went out."

"But the light's still on!"

They all stared at the lights which were burning steadily. Chuck shook his head.

"Okay, so I'm crazy. All I know is the light behaved mighty funny. It was goin' on and off all the time."

"Who was off—you, or the light?"

"It was Chuck who was off!"

"Aw, let's go back to sleep."

Chuck's account agreed so well with what he had seen himself that Dale was certain someone had invaded their quarters who had no business there. He was about to come to Chuck's defense when something told him to wait. Better to let Chuck tell his story in his own words. That way he would not be led astray by his imagination.

Taggert strode to Chuck's bedside where he stood

with his hands on his hips contemplating the unfortunate man. The captain's sleeping costume consisted of a pair of pink shorts which left his muscular torso exposed to the public gaze.

"If these fellows were here a minute ago then where are they now?" he demanded. "You got the whole routine around here disrupted. Now nobody'll be any good tomorrow."

"I suppose that's my fault," Chuck said, eying the captain scornfully. It was plain he had no particular admiration for his superior.

"I ask you—where are they?"

"How should I know where they went? They must of beat it, I guess."

"Maybe they're still here," Fleming suggested.

The men looked at one another in startled wonder. Several glanced quickly behind them.

"Search the room!" Taggert bellowed. "Settle this thing now. Then maybe we can get some shut-eye around here."

Everyone leaped into action with the exception of Chuck, who remained seated on the edge of his bed, his head clasped in his hands. In an instant there was a shout from the entry room.

"The guns are gone! We've been robbed!"

There was a mad rush to the entry room. The men gazed about them in consternation. The guns and ammunition were incontestably gone.

"They didn't leave a single bullet," MacAllister moaned. "Swiped the whole works right out from under our noses."

There was a shout from the other room. Chuck came dashing in, his face alight.

"I remember now. I heard 'em go out the air lock. Then the light came on and you guys started hollering."

"Maybe they're out there now," MacAllister cried. "They couldn't have gone very far."

Taggert jerked his thumb toward a couple of the men nearest him. "Emery, you and Burke take a look outside and see if anybody's prowling around in an old-time spacesuit."

The men sat on the edge of their beds waiting tensely for the two to report back. Conversation had almost ceased when they returned a few minutes later. The crew waited anxiously while the men removed their spacesuits. Re-entering the room, their faces were grave.

"Well?" Taggert barked impatiently.

The two men exchanged glances, as if waiting for the other to speak. Finally Emery decided to assume the responsibility.

"We didn't find anybody—" there was an audible sigh of relief from the assemblage—"but we did find some suspicious-looking footprints."

"Footprints!" Taggert jeered. "Why, the ground was plastered with footprints after we all piled in here."

Emery's expression remained unchanged.

"There's been some snow deposited since we came in. Not much, but enough to cover our footprints. Anyhow, they're a little different from ours, besides being fresher."

MacAllister was the first to recover.

"There's a mistake. There's got to be a mistake," he mumbled.

"You can go look for yourself," Emery told him.

"Say, are we all here?" Taggart demanded suddenly. "This looks to me like it might be an inside job."

"That's ridiculous," Fleming protested. "Nobody here would do a thing like that."

"How do I know they wouldn't?" Taggart retorted. "Stand up everybody and be counted."

The men rose slowly to their feet while Taggart counted noses. ". . . fifteen, sixteen, seventeen . . . What did I tell you?" he cried triumphantly. "There's one guy missing."

"You forgot to count yourself," Chuck said.

"All right, then, we're all here," Taggart admitted, slightly abashed. "Don't hurt to check, does it?"

Fleming put a question to Emery. "Did you notice where those footprints led?"

"They appeared to lead off toward the old underground headquarters," he replied. "We didn't try to follow them. We thought it best to report back here at once."

MacAllister leaped to his feet. "I move we appoint a search party and follow those footprints immediately."

"I move we appoint MacAllister to stand guard outside the hatch from now on," Collins put in.

"Second the motion," somebody yelled.

"This is a fine time to joke," MacAllister complained. "Here we are stranded on this planet—helpless. We haven't got anything to fight with but our bare hands."

"We were helpless when they stole those guns but they didn't harm us," Fleming remarked.

"You can bet they weren't here for any good purpose," Taggart growled. He gave his shorts a hitch.

"Well, looks like they've made a clean getaway. Don't see there's much we can do about it."

As no one had a further suggestion, the men slowly shuffled back to bed. Gradually quiet settled over the room, and peace descended again.

Presently there was a stifled gasp from Chuck. He sat up in bed trembling with excitement.

"Emery, how many footprints were there outside?"

A book landed on the back of his neck but if he felt it he gave no sign.

"There were a lot of footprints," Emery replied promptly. "So many we couldn't count 'em all."

"You sure?"

"Of course I'm sure."

"But there couldn't have been."

"Why not?"

"Because"—Chuck's voice sank to a whisper—"only one of those guys had on a spacesuit. The other guys didn't have anything on at all!"

## *Chapter 10* *Disappearance*

**N**O ONE slept much the remainder of the period. After about an hour Chuck got up and started breakfast. He was plainly shaken by his experience and went about his chores with a grim, preoccupied air. Dale was eager to question him but he preferred to do so alone when there were no prying ears around. In particular, he was burning with curiosity to know about the man in the ancient spacesuit. Was there anything peculiar about his face? For example, did he have a twisted upper lip, giving him the wry sardonic expression of sly, constant laughter? But there was always someone around and eventually Dale gave it up.

Progress on the base proceeded at a disheartening pace with many halts and setbacks. Although the sun was gone, Saturn was at the quarter phase and gave considerable light. The giant ringed disk hung in the sky, as immovable as the jagged mountains towering against the horizon. But although Saturn appeared fixed in the sky relative to the horizon, the stars drifted steadily past behind it, as if they were attached to a curtain moved by cosmic sceneshifters. The display of light and shadow on the planet and rings was a sight that never ceased to fascinate. Dale loved to watch the inner satellites moving along the edge of the rings like beads sliding along a silver wire.

Like so many bodies in the solar system, Titan was dull and uninteresting, a world that seemed to have been started and then flung aside as not worth the

finishing. The landscape consisted chiefly of a monotonous white plain, broken occasionally by sharp outcroppings of black rock, too steep for the snow to find a resting place. The quantity of methane on Titan was much larger than astronomers had estimated; in fact, the ground for several feet underfoot was solid ice and methane. Methane was everywhere. The travelers were enveloped in a thin atmosphere of methane. Methane crystals glinted in the sky. The thought of living in a poisonous atmosphere was much more depressing than existence on the moon in a vacuum or in space.

While the engineering crew was busy checking the electrical connections in the underground quarters, Dale decided to carry on some experiments of a purely scientific nature on his own. Certainly it would never do to return to Earth without some knowledge of physical conditions on Titan itself. To carry out the experiments he had in mind he would need some assistance, and, as he could not interfere with the work of construction, he had decided to speak to Collins as the one most likely available. As sometimes happens, their former bitterness now only seemed to draw them more closely together; he felt that Collins was his best friend with the possible exception of Fleming. After dinner he and Collins spent hours together playing three-dimensional ticktacktoe on a wire framework they had constructed. It was a game in which he had excelled at the Academy, and he was therefore somewhat chagrined to find it difficult to hold his own with Collins. Before when he lost, he had felt vexed with himself for days afterward, but now he enjoyed the good-natured banter back and forth over the table

more than anything else and was often unable to remember whether he had won or lost.

"I wonder if you could give me some help on a little project I'd like to try out," Dale remarked to Collins after breakfast the next period.

"Sure thing," Collins answered promptly. "What was it you had in mind?"

"I'd like to make some measures on the magnetic field of this planet," Dale told him. "You know the moon and Mars don't have a magnetic field worth mentioning. When they couldn't find one for Venus, it began to look as if planets smaller than the Earth couldn't generate a magnetic field. Then, when they found that *Europa* had a good husky magnetic field, it knocked all their theories into a cocked hat."

Collins nodded.

"I remember a fellow gave us a talk about it at the last I.R.E. convention in Deucalion City."

"Now I've got a hunch Titan may have a fairly strong magnetic field," Dale continued. "Several times last week I thought I detected an aurora."

"A kind of flickering glow in the sky?"

"That's it! Did you see it, too?"

"Some of the men reported a red glow in the north. They claimed it was an evil omen—"

"Evil omen, my foot," Dale said impatiently. "These deep-space men are the most superstitious bunch I've ever known."

Collins laughed heartily. "Take it easy. You can't do a thing about it."

"I suppose not," Dale admitted. "Well, anyhow, if that red glow is an aurora, then Titan must have a considerable magnetic field. I'm also very curious to know



what atoms or molecules on a planet with a methane atmosphere can produce that red glow. There's a magnetometer and a low dispersion spectrograph in one of the storerooms over in the *Albatross*. How about giving me a hand with them?"

"You bet I will. I've always wanted to know more about that stuff."

"When can you start?"

"Why, right now—"

"Great! Then let's head over to the *Albatross*."

They put on their spacesuits and crawled through the air lock to the frozen world outside. After the night of nearly two hundred hours the sun was shining on a landscape made blinding white by newly deposited methane snow. Although the rays carried scant warmth, they had a cheering effect after the dim ashy light of Saturn.

Collins gazed over at the red-and-white striped rocket ship where Taggart was maneuvering a tractor.

"Looks as if they're hitching onto our equipment," Collins said. "Evidently they can't repair that outfit of Dearborn's."

"Looks that way," Dale agreed. "Incidentally, we'll have to make our magnetic measures a considerable distance from here. We can't do anything with all that iron moving around."

They climbed up the ladder to the storage room of the *Albatross*.

"That magnetometer and the spectrograph were in here the last time I saw them," Dale said, pulling open a drawer. He lifted out some boxes which Collins proceeded to open.

"Must be something wrong," Collins said, raising the lid on one of the boxes. "I can't understand this."

"What's the matter?" Dale asked.

"Why, it looks as if everything is here! There *should* be some vital parts missing that the janitor forgot about."

They decided to make their observations around a ridge of the cliff about a mile from camp where the instruments would be undisturbed by the construction work. Unpacking the instruments and setting them up proved more difficult than they had anticipated. After several hours hard work they were not even ready to begin to make an observation.

Dale glanced at his watch.

"It's after twelve. We'd better knock off for lunch."

Collins gave one of the levels on the theodolite a touch. "Believe I'll skip it today. I'd like to get this thing in shape first."

"Well, I've got a pretty good appetite. See you in an hour."

The men were already filing into the tank when Dale rounded the ridge. He noticed that they kept close together, and that when one was forced to go off alone on some errand, he moved with a speed that was truly amazing. Ever since the guns had been stolen there had been but one thought uppermost in the minds of them all: would the same disaster strike their own colony that had overtaken the one before? It was impossible to rid oneself of the feeling that nothing was permanent. That the man sitting next to you might vanish if you turned your back, or, that you yourself might vanish the next instant. Dale had gradually come to adopt a fatalistic attitude toward the situation.

If he were going to disappear like a rabbit from under a magician's hat—then he was going to disappear. Besides, didn't the rabbit always turn up later, apparently none the worse for its experience? Perhaps it would be the same in his case.

He ate hurriedly without entering into the conversation, anxious to get back to Collins as soon as possible. With good luck they might be able to take some preliminary observations with the magnetometer before dinner. But there was still much to be done, and he had to make another trip to the *Albatross* for more tools.

Dale left the table ahead of the others and hurried over to the *Albatross*. The tools he was seeking were scattered far and wide over the ship, so it was half an hour before he had located them all. He had just started down one of the landing supports when a call that made him jump crackled into his earphones. The letters BEV were repeated in rapid succession. To a nuclear physicist, BEV meant *Billion Electron Volts*, but to a spaceman it meant danger in large quantities. He slid the rest of the way down the ladder and dashed to the tank. He found the crew clustered outside the hatch in a tight little group. They hailed him anxiously as he came running up.

"What's wrong?" he gasped.

"Man missing," Fleming replied grimly.

Somehow Dale knew what the answer would be even before the words struck his earphones.

"When did it happen?"

"Just now. Not five minutes ago."

Dale ran his eye over the group.

"Who was it disappeared?"

"It was your pal, Collins."

"Collins!" Dale cried. "Why, how do you know he disappeared?"

"Well, he isn't around here anywhere, is he?" Taggart said.

"Of course not," Dale retorted. "How could he be around here when he's working over behind that ridge?"

"But he came in to lunch with you," several voices chorused.

Dale shook his head slowly.

"You mean you *thought* he came in with me. You've gotten so used to seeing us together that when you see one of us you assume the other is there, too. So later, when you couldn't find Collins, you immediately supposed he had disappeared, whereas he was simply never here in the first place."

"If you're trying to pull any tricks," Taggart growled.

"Do you think I'm crazy?" Dale returned heatedly. "Collins is right around that ridge working on some magnetic apparatus. Go see for yourself if you don't believe me."

The men continued to regard Dale suspiciously. He was still not one of them. Not quite an accepted member of the group.

"Looks as if we've been scaring ourselves," Fleming confessed. "Next time we'd better do a little checking before we sound the alarm."

"Yeah. Who sent out that BEV call anyhow?" Taggart demanded. When no one answered, he nodded toward the tractors. "Well, back to work everybody. And, Sutton, you watch yourself."

Dale hurried around the ridge to where he had left

Collins. Now for some reason he was filled with a vague dread that Collins might be missing after all. It had been bad judgment to leave him alone.

Thank the stars! There was Collins' familiar figure bending over the theodolite. Dale broke into a run he was so eager to make *sure* it was Collins.

Collins grinned as he joined him. "Almost got it now. They claim you can make an observation in two minutes with this gadget. Just goes to prove you can never believe what the instruction book says."

He paused at sight of Dale's face.

"Are you making that wheezing sound or is that the music of the spheres?"

"You had everybody scared to death back at the camp," Dale told him. "I've been running . . . Wanted to make sure you were here."

"How could I scare 'em when I've been right here every second?"

"Case of mass delusion," Dale explained. "Everybody assumed we came into lunch together. Later someone noticed you weren't around and there was pandemonium immediately. They put out the BEV signal—"

"Put out the BEV signal!" Collins threw up his hands. "Never supposed I rated that high."

Dale grinned. "You'll have something to tell your children now. I can see them clustering around your knee. 'Daddy, tell us about the time they put out the BEV signal for you.' Then you'll tell 'em the old, old story . . ."

"Cut it," Collins grunted. "I don't like to look that far ahead." He sighed and returned to the theodolite. "Maybe you'd better take a look at this . . ."

For the next five hours they were so absorbed in

adjusting the instruments that the time slipped away unnoticed. Since the sun rose and set at an interval of more than a week, there was no twilight to warn them of the end of day; hence it was necessary to be more than usually alert in watching the clock.

Before they could set up their magnetic apparatus it was necessary to determine the latitude of their station with accuracy. The easiest way to do this appeared to be to measure the altitude of *Gamma Cephei*—the North Star of Titan—at an interval of half a Titanian day—first when it was above the north celestial pole, and again when the star passed below it. The mean of the two altitudes would then be the latitude.

"Here comes *Gamma Cephei*," Collins said, squinting into the eyepiece of the theodolite. "Sure moves slow. You'd think the stars were stuck up there in the sky."

"Give me a reading every couple of minutes," Dale told him. "I'll catch the time off the chronometer here."

"Okay, here's the first one—time!" Collins read the figures through the magnifier on the side of the instrument. "Twenty degrees forty minutes ten seconds. No, that's wrong. It's twenty-one degrees forty minutes ten seconds. Kind of hard to see these divisions."

Dale jotted down the figures in his notebook. At the end of half an hour he glanced at his watch and shut the book.

"It's nearly six. We'd better be getting back to camp."

"Got time for another reading?"

"Afraid not. I'm sure we went through lower culmination all right."

Collins rose reluctantly and prepared to leave. "Think it's safe to leave these instruments exposed here?"

"Let's put this cover over them," Dale said, hauling out a section of canvas from one of the boxes. "There—now they should be all right."

They draped the canvas over the theodolite and other apparatus. In an instant these were transformed from precision scientific instruments to misshapen figures huddled on the snow-covered plain.

"Well, we got a good deal done despite all our hard luck," Dale said cheerfully, as they trudged back to camp. "By this time next period we should have the magnetometer set up."

Dale was in a talkative mood but Collins was silent and preoccupied. They had rounded the ridge and were about half a mile from camp when Collins stopped abruptly.

"I'm going back," he announced.

"Going back? What's the idea?" Dale asked, somewhat annoyed.

"I'd like to take another look at that altitude circle. I'm still not sure of that reading."

"We can check it next time."

"No. Something might happen to it."

"It'll be all right."

"You go on ahead. I'll catch you before you get to camp."

Collins hurried off around the ridge while Dale plodded on alone. He had only gone a short distance when he became aware of some subtle change in the illumination of the landscape. The light was dwindling and the snow was tinged a pale sickly yellow. An un-

reasoning fear clutched at his heart. Something queer was happening to the sun, as if the light of the world were going out. He whirled around . . .

So that was it! Titan was being eclipsed. The sun was almost hidden behind the disk of Saturn. Only the merest thread of light was spilling out. The planet wasn't a planet any more but a thing of lines and curves—a skeleton in the sky.

Dale looked behind him. It was taking Collins an inordinate length of time to check the reading on that circle. There were still ten minutes left before Chuck rang the dinner bell. He would go back around the ridge and see if Collins were coming yet.

The direct rays of the sun suddenly vanished, plunging the landscape into deep twilight. Dale wondered how long the sun would remain hidden. Probably several hours if the eclipse were central. It occurred to him that a total solar eclipse must be a fairly rare event on Titan. Why couldn't it have happened some other time?

Dale walked faster and faster, impelled by a sense of foreboding which he was unable to resist. By the time he rounded the ridge the light was so dim he could barely discern objects a few hundred yards distant. He could make out the bulky shapes of the instruments under the canvas but where was Collins? Behind one of the instruments probably. He must be!

Dale was breathing hard when he reached the station. The theodolite was bare. The canvas cover lay beside it on the snow.

"Collins! Collins!" Dale shouted.

There was no answer. He snatched the canvas from the other instruments. Collins was gone . . . gone . . .



## Chapter 11 *The Fight*

DALE gestured impatiently at the hostile circle of faces confronting him. "I tell you that's all I know," he insisted. "Collins hadn't been gone ten minutes. I started back after him. Then this eclipse began. When I got back he was gone. I can't make it any different."

"Why didn't you stick with him?" said Taggert.

"Why should I? There was nothing I could do."

"You never should have left him."

"Aw, what difference does it make whether he stayed with him or not?" MacAllister said dejectedly. "We can't stay together *all* the time."

Fleming who had been standing at the rear of the room now came forward. "We're wasting valuable time standing here arguing. We ought to be out doing something."

"I think Fleming is right," Dale spoke up. "It isn't human to stand by this way. We ought at least to form a search party."

"Where would we search?" several asked.

Taggert thrust himself to the front again.

"I'm getting out of here," he said in a husky voice. "This place has got a hoodoo on it. I can feel it. I felt the same way once before when I got lost in the *Gegenschein*."

There was a murmur of approval. Taggert evidently expressed the sentiments of a good many who had been too fearful to speak up.

"We don't know that Collins is gone like the others," Fleming remonstrated. "He may still show up."

Taggert laughed harshly.

"Show up? You know he won't show up. He's gone for good. The same way the rest of us will go if we stick around here."

There were muttered threats from some of the crew.

"That's right."

"You know it's right."

"Let's pull out now."

"But we can't pull out now," Fleming protested. "We're here—we have a grave responsibility."

"Why can't we pull out?" Taggert asked. "I say let's pull out now while there's still enough of us left to man the rockets."

There was a rush toward the door. Fleming tried to intervene but the men brushed him aside. Dale leaped in front of them.

"Get back," he ordered.

Taggert stood glaring at him. "You think you're mighty good, don't you? You think because you know more you can push the rest of us around?"

Dale's face was pale. "I used to think so. I used to have a lot of queer ideas. I've learned a lot from Fleming and Collins and some of the rest of you. There were some things they never taught us at the Academy. Or at least we never got them straight."

He measured Taggert with his eye.

"But there were some things they did teach us. They taught us not to run out on people who put their trust in us."

Taggert moved closer.

"Who's running out on anybody?"

"You are. You were entrusted with this expedition. You were put in charge by the high command at Central City—"

"As if any of those guys cared."

"I wasn't thinking so much about them. I was thinking of Fleming, who's invested all his money in this expedition, and of Collins. I think Collins is still here. He may need us now. And I mean to find him."

"Still playing the hero, eh?"

Dale shook his head slowly. "I'm just telling you what I'm going to do."

Taggart regarded him contemptuously.

"I could take you to pieces with one hand."

There were shouts from the crew.

"What are we waitin' for?"

"Let's go!"

There was another movement toward the door but Chuck and a few of the other men held back.

"Men—think!" Fleming pleaded.

"Get away from that door, Chuck," Taggart commanded.

"You're not giving orders to me, you big blowhard," Chuck retorted.

MacAllister waved both hands wildly.

"Listen! I got an idea. There's some that wants to go along with the captain. There's others want to stay here with Sutton. So why don't we let the two of 'em settle it for us?"

"You mean fight it out between 'em?" said Chuck.

"Sure. Why not?"

"Suits me," Dale replied in a remarkably firm tone, considering the fact that he was shaking all over.

Taggart stood regarding Dale with a puzzled ex-

pression. "You sure you know what you're getting into?"

Dale smiled confidently. "Are you sure you know what *you're* getting into?"

"Make a ring," MacAllister shouted, bustling around the room. "Get a couple of chairs. Dale, you're in this corner. Taggart, you're over there."

There is a fascination in watching a fight between two willing combatants that few men can resist. Dale wondered if MacAllister really cared about staging a fight between him and Taggart, or whether it was merely a clever device to get the crew's mind off themselves for a time. Perhaps the little business manager was smarter than he had suspected.

"We need some handlers over here," MacAllister said, waving toward Dale's corner. "Any volunteers?"

"I will," Chuck said. He hurried over to Dale's corner, followed by Fleming.

Dale peeled off his shirt and sat down on his chair. Taggart was staring at him from the opposite corner of the room with a sullen questioning expression. Occasionally he exchanged a word with the men hovering around him.

"This Taggart is pretty tough," Chuck whispered. "You better watch out for his left."

"I'll be careful," Dale promised.

"Better watch out for his right, too. He packs an awful wallop in that right."

Chuck ran his eye appraisingly over Dale's slim arms and shoulders and then cast an anxious glance at the captain's brawny frame.

"You can still get out of this," he confided. "You

don't have to go in there and be massacred just because MacAllister said so."

Dale nodded carelessly.

"Thanks for the advice. By the way, where did the captain acquire his formidable reputation in the ring?"

"He used to be a sparring partner for Bill Moreno till he went in the shipping business."

"Bill Moreno!" Dale exclaimed. "You mean the former middleweight champ?"

"That's the one. Moreno's his cousin."

"A professional, eh?" Dale said as nonchalantly as he could under the circumstances.

"I don't think he was ever a real pro. He just used to spar around with his cousin."

"Are you ready?" MacAllister bawled from the center of the ring. He seemed to be thoroughly enjoying himself as self-appointed master of ceremonies.

Dale nodded. Taggert responded with a wave of his hand. Chuck bent over Dale, keeping up a running stream of advice.

"Don't let him corner you. Box him. Keep away from him. Don't let him work in close. I'll throw in the towel if it gets too bad."

MacAllister gestured for silence.

"Four three-minute rounds for the championship of the Saturnian system. Protect yourself at all times and may the best—I mean the better—man win!"

"Time!" someone called, striking a tin pan with a ladle. Taggert sprang from his corner and rushed across the room, both arms working furiously. Dale had anticipated some such an attack but he was hardly prepared for the rain of blows showered upon him.

The captain was by far the best man he had ever met. His blows carried such force that Dale was thrown off balance even when he blocked a punch.

Dale backed away hastily, keeping his left extended far in front. The captain tore in, swinging wildly. Dale jabbed him once . . . twice . . . three times in the face without a return. Taggart brushed his punches aside contemptuously, rushed Dale against the wall, then burying his face against the lad's shoulder began pounding him with short vicious hooks to the body. Dale tried desperately to keep inside him but the captain was too strong. He had to hold on hard at the end of the round to keep from going down.

Chuck and Fleming were loud in their praise when Dale stumbled to his corner. They had apparently not expected him to last a minute, and the fact that he was still upright at the end of the round left them gasping. Chuck wiped off his face with cold water while Fleming waved a towel.

"You're doing fine," Chuck cried admiringly. "How do you feel?"

"Pretty good," Dale said. "He's awfully strong."

"I think he's weakening," Chuck said. "Try to box him this round."

"What did you think I was trying to do—waltz with him?"

True to Chuck's prediction the captain slowed down badly in the second round. Yet there was still enough sting in his punches to keep Dale from taking any chances. He kept Taggart at a distance, ducking and sidestepping when in close quarters, and jabbing him repeatedly with his left. At the beginning of the bout the cheers had been mostly for the captain, but

now sentiment was about equally divided. By the end of the round Taggart's supporters were thoroughly alarmed. Although Dale had landed few damaging punches, the captain was wobbling around the ring, while Dale appeared fresher than at the start.

"You've got him!" Chuck whooped, as he readied Dale for the third round. "Now go in there and show that big windbag up for what he is."

"I think he's in a bad way," Fleming said, gazing toward the other corner where Taggart's handlers were engaged in a deep conference.

"There's the bell. Let him have it," Chuck cried.

Dale rocked Taggart's head back with a long left, followed it with a hard right to the body, then another long overhand left to the head. Taggart sagged. He tried to block the blows but his arms seemed like lead. Dale stepped in confidently throwing punches with both hands. The captain retreated, taking cover with both arms wrapped around his head. Dale backed him into a corner, and stood poised with his right hand cocked looking for an opening . . .

*Crash!*

Dale found himself staring down at the speckled green pattern on the linoleum floor. Strange how he had never really noticed it before. From a great distance he heard MacAllister tolling off the seconds.

" . . . four . . . five . . . six . . . "

It occurred to him that in another four seconds he would be counted out. Maybe he had better see about getting up. The room was a dizzy gray and his legs seemed to belong to someone else. He lurched to his feet at the count of nine.

Taggart swarmed all over him. Blows thudded

against his head and body but they no longer had the power to hurt him. He fell into a clinch and hung on blindly till the bell.

He was conscious of Chuck and Fleming working over him frantically; of Chuck shouting advice in his ear; then they propelled him toward the center of the ring for the fourth and last round.

Dale never knew how he lived through the next three minutes. He was on his feet blocking, ducking, and throwing punches automatically, without any conscious effort on his part. He knew that the bell would ring after awhile and then he could quit. He could keep going till the bell rang but not a second longer.

"Bong!"

Dale awoke to find himself leaning against Taggart, his chin resting on the man's shoulder, and his mouth wide open sucking in the air in great gulps. He had to grab the captain hard around the waist to keep from slipping to the floor. There was some weight pulling him down . . .

Then he realized that Taggart was hanging onto him. That they were standing in the center of the ring supporting each other. For a moment they stood staring at each other in blank exhaustion. Slowly Taggart's face broke into a grin.

"It was a swell fight," he mumbled. "Didn't know you were that good."

"You were pretty good yourself," Dale said.

The captain put one arm around his shoulder and waved at the crowd with the other.

"We're sticking," he announced. "Anybody who tries to leave will have to answer to me."



There was silence for a moment. Then everyone began to talk at once. They crowded around them laughing and shouting and pounding them on the back.

Dale felt immensely happy. He liked Taggert. He was swell when you came to understand him.

"I didn't mean to run out on the job," Taggert said bitterly. "You've never had the hard knocks like me. Sometimes I think I can't take any more. I get mad and want to hit back at somebody."

Dale nodded sympathetically. "I know how you feel."

MacAllister embraced them both ecstatically.

"Greatest scrap I ever saw. Remember it as long as I live. I feel ready for anything now. Let the Saturnians come. Let 'em do their worst."

The lights began to dim . . .

## *Chapter 12* *The Face of Dearborn*

[ FLEMING scanned the desolate surface of Rhea moving below them.

“One place looks about as bad as another. Why don’t you set her down over there?”

“I’ll try,” Dale said, reaching for a black enamel button on the control board.

Instantly they were conscious of a force acting upon them, a sense of strain in space, as definite as the tension along a tightly stretched rubber band. You couldn’t see the force or feel it or hear it as you could lightning or heat or sound, but nevertheless you knew it was there, and that it could save or destroy you, depending upon how it was used.

Both held their breath as the stern of the ship slowly descended toward the planet. From a hundred miles the surface of the satellite had resembled a muddy field but now it began to look more like a gravel bank. The ground was leaping up at them. In another minute they were going to crash . . . The ship settled gently to the surface, teetered irresolutely for a moment and then came to rest.

Fleming sighed deeply and got off his bunk.

“I’ve made a thousand landings and I still think the next one is going to be my last.”

They donned their spacesuits, hurried through the air lock, and swung down the ladder to the rocky surface below. The view was not encouraging. They appeared to be near the center of a vast crater, similar in structure to one of the giant walled planes on the

moon, such as Theophilus or Ptolemaeus. Like many of the lunar craters, too, there was an irregular peak at the center which towered almost to the level of the surrounding wall.

"Wonder whatever caused Dearborn to select this spot for his camp?" Dale said, surveying the bleak landscape.

"Doubtless he had his reasons," Fleming murmured. "Are you sure this is it?"

"Must be," said Dale. "Everything checks. There are the three craterlets in a row with the long crack running along beside them. Although I don't see any signs of the camp itself."

"The most likely spot would be in one of these caves at the base of the central peak," Fleming suggested. "Suppose we wander over in that direction and take a look around."

They began picking their way over the pulverized rock that littered the crater floor. The debris was of a uniform brownish tint, appearing to have undergone extensive chemical action.

"The closer we get to Saturn the less I like it," Fleming said, gazing with troubled eyes at the giant globe looming on the horizon ahead of them. The planet appeared suspended in space above the crater rim like a swollen Easter egg that had been badly streaked and mottled in the dyeing bath. The surface exhibited a variety of colors that would have astonished astronomers compelled to view the disk across the void of a billion miles. The south equatorial zone was light reddish, while the broad equatorial belt in the north was a dull chlorine-green broken by festoons similar to those seen on Jupiter. In higher latitudes, yellows

and oranges predominated, broken by an occasional thin streak of rose. The darkest regions occurred at the poles, the south polar cap being a muddy chocolate-brown and that in the north ranging from gray at the edge to nearly black at the pole itself.

"What's the matter?" Dale asked.

"I don't know," Fleming admitted. "I just feel there's some evil force emanating from under those cloud belts."

Dale laughed.

"Wait till we follow Dearborn's trail to Mimas. It will seem positively sinister." He frowned thoughtfully. "I wonder what is under those cloud belts?"

"Couple of hundred years ago astronomers thought the surface under the clouds was inhabited."

"Inhabited!" Dale stared at him incredulously. "They must have been crazy."

"Not at all. They were just as smart as you or I—maybe smarter."

"Oh, but that's impossible. I mean about the planet being inhabited."

"It seems so now in the light of our present knowledge," Fleming agreed. He walked on in silence for a moment, his eyes on the cracks or rills radiating from the central mountain. "The most extraordinary part is that the astronomers didn't merely wonder if Saturn *might* be inhabited. They didn't see how anybody could possibly doubt that it was inhabited. You know, the great Sir William Herschel firmly believed not only that the planets were inhabited, but the sun as well. And later Richard Proctor, a professor of astronomy at Cambridge, England, asserted that no one could

reasonably imagine how a system as magnificent as Saturn could conceivably be devoid of inhabitants."

Dale shook his head hopelessly.

"Just goes to show how wrong astronomers can be," he declared. "Did he mention how the inhabitants of Saturn looked by any chance?"

"He didn't say, except that they couldn't resemble creatures like us."

"No . . . nor any other kind of creatures either," Dale added in disgust.

As they approached the base of the peak, they perceived that its sides were honeycombed with caverns of all shapes and sizes, as if some corrosive substance had eaten deep into its interior. They paused before one particularly gloomy opening that might well have served as the model for the mouth of some monstrous Saturnian creature.

"Looks like the entrance to the Fun House down at Redondo Beach," Dale remarked.

"Only I doubt if you'd find much to laugh at in there," Fleming commented grimly. He stepped a few feet inside and snapped on his flashlight, letting the beam rove over the walls. The cavern seemed to go on and on, forming galleries and caves and draperies without end. Occasionally the beam struck some object that shone with a dull luster in the darkness. Exploring the cave had all the fascination of hunting for wild flowers in the wood. The best ones seemed to be always just a little farther ahead. Now and then they turned to gaze at Saturn shining like an illuminated painting in the cavern entrance.

"Watch out," Fleming called to Dale who was

hastening on before him. "Let's be sure we can find our way out of here before we get in too deep."

"There's an experiment I want to try when we get out of the sunlight," Dale called back.

They plodded on until they rounded a turn blocking out the light at the entrance. When they were in complete darkness Dale detached a special lamp from his belt and snapped on the switch. The cavern walls were transformed as if by magic. Although the lamp emitted only the feeblest visible light, the cave glowed purple, green, and yellow as if it had come alive. The effect was like a scene from the *Arabian Nights*.

"Amazing," Fleming murmured, when he had recovered somewhat from the sight. "That green over there resembles willemite and there's some autunite, if I'm not mistaken. I hardly expected to find such minerals in a planet like this one."

"I'd like to get a sample of that red stuff down there," Dale said, concentrating the beam on a glowing crimson streak several yards ahead. Fleming heard him stumbling over the irregular ground, followed by the sound of his hammer beating against the rock. Suddenly there was silence.

"Hey, Fleming, come here," Dale said in a hushed voice.

Fleming made his way with some difficulty to the place where Dale was standing, leaning against a long stalagmite.

"Anything wrong?" he queried.

Dale caught his arm. "I thought I saw a light up there."

"Your ultraviolet lamp caught something."

"But I didn't have it on."

"You must have had it on and didn't know it."

"I'll swear I didn't."

The two men stood considering for a moment. Sometimes one fancied he saw specks of light moving in the darkness but these arose from disturbances in the retina of the eye itself.

"Where did you see this light?" said Fleming presently.

"It seemed to come from that direction," Dale replied. He sent the beam from his flashlight probing into the blackness confronting them like a wall. The beam was invisible. It revealed nothing and ended in nothingness.

"Well, I don't know what it was but you must have deceived yourself somehow," Fleming told him.

"Yeah, I guess so," Dale muttered. He moved the torch around trying to find something solid but it was like pointing a beam into outer space. "Good thing I stopped when I did. There doesn't seem to be any bottom ahead of us."

"Not that you can see anyhow," Fleming grunted. "What do you say we get out of this speleologist's paradise?"

"Sounds like a good idea," said Dale. "Now let's see . . . which way is out?"

"Should be right in back of us."

Fleming started to crawl along the side of the cave, following the beam from Dale's torch.

"Can you give me a little more light?" he called back. His voice sounded weak and faraway.

Dale shook the lamp and worked the switch back and forth. The memory of that experience in the underground headquarters was coming back . . .

"My battery must be weak," he said, struggling to keep his voice calm. "Try yours."

Fleming's lamp glowed a dull red, scarcely bright enough to reveal the metal fastener on his helmet. Even as they watched the light faded and expired, leaving them in blackness.

"We don't need the light," Dale cried. "Follow the wall and I'll trail after you."

There was no answer. Dale called again, speaking quietly at first, then louder and louder until he was almost screaming. Still there was no answer. He was surrounded by a wall of silence as well as a wall of darkness.

Dale crept on a few steps then stopped, holding himself rigidly still. Suddenly he felt almost completely disoriented. Not only was he unable to see and hear, but the force of gravity was so feeble that in the darkness he could hardly be sure which was up and down. The only sense that remained to guide him was that of touch or pressure. He could feel the solid ground beneath his shoes and the pressure of the walls against his fingers.

He knew that Fleming was only a few feet away, but so far as contacting him by ordinary means, he might as well have been upon a planet revolving about a star in the Great Bear. Yet they must find each other. It was ridiculous to stand there immovable, as helpless as a dog tied to a post.

A dog tied to a post! If you were tied to an object, that meant you were connected to it. Why hadn't he thought of that before? The trouble was he had gotten so used to thinking in terms of radio and other high-



powered means of communication that he had forgotten there were other ways.

He unfastened the safety line from his belt and ran it through his fingers forming a loop about ten feet across. Then opening the loop wide he flung it outward and away from him into the darkness. He threw it once . . . twice . . . three times without result. The fourth time as he pulled it toward him there was resistance at the other end. A moment later he and Fleming were clutched in each other's arms.

For a long time they clung to each other with the fervor of drowning men. When they had recovered, Dale tied the line around their waists, securely coupling them together with a yard of rope between. Then Fleming began moving, keeping one hand against the wall and feeling carefully ahead at each step before putting his foot down. They did not fear plunging to death down some crevice, for on a planet with a surface gravity as low as Rhea's, it was practically impossible to sustain a dangerous fall. Their greatest fear was that they would stray into some side path where they might wander indefinitely, until overcome by exhaustion.\*

Time and again Dale despaired of ever reaching the entrance. He cursed himself for the fool he had been to wander so far within the cavern. Fleming had warned him. It had seemed so easy to find their way back. And it would have been easy if their lights had not gone out. Already he felt as if he had been underground for hours.

\* A fall of 250 feet on Rhea would correspond to a fall of about 10 feet on the Earth.

Light! There was no mistaking it. A dim radiance illuminating the walls around them. There was Fleming's form distinctly silhouetted in front of him. They rounded a turn and there was the outdoors straight ahead, with Saturn still shining in the entrance like a picture. A few more steps and they were free of the cave for good.

Dale untied the rope from about their waists and coiled it at his belt again. Good old safety line! How often he had scorned it as a needless precaution. Now he would never venture a foot into space without it.

"Kerchoo!"

Dale gave a startled leap that sent him shooting a dozen feet overhead.

"I take it that I'm back on the air again," Fleming remarked, as Dale came drifting down beside him.

"Either that or else I got a burst of radio noise from the champion sunspot of all time," Dale commented.

"Our flashlights are on, too," Fleming said. "Nice and bright as you please."

The older man stood gazing off toward Saturn, clasping and unclasping his hands behind him.

"There's something mysterious going on here. Something I don't understand at all."

"It makes you feel so helpless," Dale said.

"I can understand batteries growing weak and connections failing but you can't explain it that way. That's too easy."

"But what other explanation is there?"

"I don't know but that's not the one."

There was an unnatural note in his voice that caused Dale to glance at him sharply.

"You can think of many perfectly simple reasons why a flashlight or a radio should go dead," Fleming continued. "You or I could, if we wanted to, put them out of commission in a minute."

"Sure," Dale said, with a puzzled look.

Fleming tapped the face of his wrist watch.

"But there are some things we couldn't change in the slightest degree regardless of how hard we tried. For example, we couldn't possibly change the activity of the radium salt that makes the numbers on my wrist watch glow. Those atoms go on emitting energy just so fast and there's absolutely nothing we can do to speed them up or slow them down."

Dale stood watching him curiously.

"Well, something happened to change the emission from those atoms while we were in the cave. I couldn't read the time on my wrist watch."

"You must be mistaken—"

"No, I wasn't mistaken," Fleming declared. "At first I thought I must be mistaken and so I looked again very carefully. The face of my watch was blank. The numbers were gone. Dead."

Dale glanced at the face of his own watch. The numbers glowed in the dim light as usual. Suddenly he felt very tired. It was as if he had been passed through the filter, leaving him drained of vitality. He noticed that Fleming appeared to sag a bit at the knees, too. But since the older man was in charge of the expedition he hesitated to speak.

Fleming turned from contemplating Saturn.

"How about going back to the ship for some food and rest?"

Dale nodded gratefully.

"I could use some." He disliked to tell him how much he could use it.

They started toward the rocket, skimming over the ground in long sweeping strides. Each man had two shadows for company, a faint one due to Saturn and a stronger one cast by the sun. Dale noticed Titan emerging from behind the planet. Curious how that place seemed almost like home now. He would be glad when their trip to the inner satellites in search of Dearborn's old stations was over. By that time Taggart should have the underground headquarters in shape so they could live in comparative comfort. He wondered idly how the captain was getting along back there.

Inside the ship Dale stripped off his spacesuit and stretched out on one of the bunks with a long sigh of satisfaction. Never had the security of the ship been so welcome before. It seemed impossible that only a few minutes ago he had been groping his way through that ghastly cave.

Fleming came in from the galley with a steaming pot of chocolate. Dale sipped the hot liquid gratefully, feeling very secure and comfortable gazing out of the window at Saturn and his shifting family of satellites. How had they all gotten started in the first place, he mused. He thought of all the fine theories astronomers had spun to explain the origin of the planets. How many times had they been sure they were right, only to discover some flaw, seemingly insignificant at first, but eventually undermining the whole structure.

"Sometimes I get tired watching those satellites out there," he said, pouring himself another cup of choco-

late. "Going round and round without ever getting anywhere."

Fleming nodded thoughtfully.

"Maybe something will happen to them yet. Remember a thousand years is only a second in the life of a planet."

"Maybe so. But if you ask me they'll just go on revolving forever. They're like a lot of people—nothing exciting is ever going to happen to them again."

"Well, I don't know how the moons of Saturn feel but speaking for myself I've had enough excitement to last me for quite awhile," Fleming said, yawning and setting down his cup. "Let's get a good sleep. Then we'll feel more like exploring this place."

"Sounds fine," Dale murmured. A moment later he was sound asleep.

Dale was awakened by a metallic knocking overhead. He had dreamed that he was crawling over a high, structural steel framework accompanied by a little man with whiskers and a hammer. The little man was an astronomer and this building had something to do with his theory of how the planets and satellites had originated. The bewhiskered stranger kept tapping the beams with his hammer to make sure there were no weak places in the structure that might give way later on. Dale wished that he would finish with his everlasting tapping so that he could get back to Earth. They had been over the building twice now . . .

The little man with the hammer faded but the tapping continued. Dale lay very still, listening intently. Now it was gone. The only sound was Fleming's

regular breathing and the sighing of the air-conditioning machinery. Perhaps he had dreamed it. How could there be anything to make a tapping noise around a spaceship? But there it was again, not so much a tapping noise this time, but more like someone clambering over the metal sheaf outside the room.

Dale rose stealthily and glided over to the window. He must have been asleep for several hours, for the sun had set and the only illumination was the pale disk of Saturn. He crouched in the darkness with one ear against the wall. Whatever had awakened him was coming closer, scraping its way over the hull a foot at a time. The sounds ceased for an instant as if the thing were gathering strength for a final effort. Now it was advancing toward the window. A hand was feeling over the glass . . .

Every story Dale had ever read of robots and bug-eyed monsters flashed through his mind. The figure at the window moved slightly so that the light from Saturn fell across its head. It was no monster but a man like himself in a spacesuit. A big cumbersome suit like the kind men wore a century before.

Dale reached for his flashlight, taking care to keep within the shadows along the wall. Holding his breath he crouched at the side of the window with his thumb pressed tightly against the switch. One . . . two . . . three . . . now!

He sent the beam squarely into the face of the helmeted figure peering in the glass. Through the opening in the front a man stared back at him; a man with deep-set eyes, a nose curved like a hawk's and an upper lip that was slightly twisted, giving the face a sinister, diabolical expression. He was so close that

Dale could see the pupils of his eyes dilating under the light of the torch. The two stared at each other as if petrified for a moment. Then there was a scuffling sound and the man was gone.

The room was flooded with light. Fleming was sitting up in bed regarding him with blank astonishment.

"You look as if you'd seen a ghost," he exclaimed.

Dale forced a laugh. "Maybe I did—a ghost in a spacesuit a hundred years old."

"You did!" Fleming jumped out of bed and slipped over beside him. "Did you see its face?"

Dale nodded dazedly.

"It was Dearborn's face. The same eyes and nose, the same twisted lip—just as it was in the photograph."

Fleming leaned against the wall and passed his hand absently over his eyes. Suddenly he seemed to have grown older.

"We knew there were strange happenings on Titan. Sort of expected it, in fact. But not here. I thought we'd be free of them here."

"There's something queer about this whole Saturnian system," Dale burst out. "I've felt it ever since we came past the orbit of that outer satellite—the one Dearborn called the Three Fates."

"I know—"

A buzz from the radio cut them short. Dale rushed to the panel and threw in the switch.

"Fleming and Sutton on the *Maia*," Dale called.

"Taggart calling."

The voice emanating from the transmitter had a faint husky sound. The radio faded and sputtered. Dale's fingers flew over the panel.

"Go ahead, Captain. How's everything on Titan?"

"Come back," the voice gasped.

Dale and Fleming stared at each other, scarcely breathing. Dale bent nearer the panel.

"What's happened? Is something wrong?"

"The *Perihelion* has disappeared."

His voice was drowned in a wave of static. When it cleared, the captain was gone.



## Chapter 13 *Into Saturn*

DALE labored over the panel for several minutes but the transmitter remained stubbornly dead. Finally he gave it up and strolled back into the room.

He frowned. "Somehow that didn't sound exactly like Taggart."

Fleming's laugh was thin and high. "It sounded like Taggart when he's scared to death."

"You're sure?"

"Oh, it was the captain all right." Fleming sat despondently on the edge of one of the bunks with his head propped in his hands. "I'm afraid we'll have to hightail it back to Titan as fast as we can," he said.

"Are those orders?"

Fleming nodded slowly. "Something terrible must have happened. We've got to give them whatever help we can."

"Not much doubt about it, I guess." Dale returned to the panel and began setting up the problem on the automatic computer. Several minutes' silence ensued while the machine attacked the calculations. Presently a green light flashed above the instrument and Dale nodded to Fleming.

"All ready, sir. Any time you say."

Fleming grinned feebly. "All the equipment on board? Any stray spacemen hanging to the framework?"

"Don't think so, sir."

"Then let's go. The quicker the better."

There was a deep-throated roar from the rocket

motors. The region around the *Maia* was lit by a vivid glare from the exhausts. The ship rose slowly—seemed to be hovering almost stationary over the surface for a moment—then soared rapidly into the black depths of the sky.

"I wish the *Perihelion* could have picked a better time to disappear," Dale grumbled. "Titan is way around on the other side of Saturn. It will take us a day to get there."

"A day, eh?" Fleming drummed nervously on one knee. "Why don't you try raising Taggart on the radio again? I think it would help if we could keep in contact. Give us both moral support—like that rope in the cave."

"Good idea," Dale said, smiling at the recollection. "I'll see what I can do."

He sent the call hurtling through space while Fleming paced restlessly up and down the narrow room. The communications seemed dead. An unnatural quiet hung over the set as if they were the last men alive in the solar system.

Fleming ceased his pacing up and down to peer out the window. "There's Titan coming out from behind the rings now. Hmmm, there's another satellite right in line with it."

"That so?" said Dale, consulting one of his charts. "Didn't know there were any others in that vicinity. Wonder which one it can be?"

"How about Japetus?"

"Don't think so—"

There was a buzz from the radio. Dale leaped at the transmitter.

"Got it!" he cried. "Now if we can only hold it."

"That's the carrier wave of the *Albatross* all right," Fleming said, joining Dale at the panel.

"Come on, Taggert. Come on," Dale begged, but there was no response except the drone from the carrier wave. Dale sat with his eyes fixed mechanically on the switchboard. Suddenly he started and bent closer over one of the dials.

"That's their carrier wave but it's not coming from Titan," he announced.

"But it must be," Fleming insisted.

"Look at the dial there," Dale told him. "The X-co-ordinate is much too big."

"But there's always some instrumental error—"

"I've already allowed for that."

They stared at the dial, unable to believe their own thoughts. Fleming began pacing the floor again, clasp-  
ing and unclasping his hands.

"There's only one thing to do," he muttered. "Tie onto that carrier wave and keep on it even if it leads us to Saturn itself."

Dale performed the operations necessary to keep their ship locked with the *Albatross*. After that there was nothing to do but wait with what patience they could to see where the ship was taking them. The drone of the carrier wave had a hypnotic effect. They drifted idly about the room, too absorbed in their own thoughts for conversation. Fleming had been gazing moodily out of the window when he turned to Dale excitedly.

"Which satellite did you say was in conjunction with Titan?"

"I didn't say," Dale replied. "The chart doesn't show any object in that vicinity at this time."

"But there's a satellite right in line with Titan," Fleming insisted. "It looks as if they're almost touching."

"Probably a star," Dale said carelessly.

"That's no star," Fleming declared. "Say—come here quick. Something's happening out there."

Dale rose obediently and strolled to the window. He took one look and grabbed for the small telescope mounted near the window.

"By the left hind leg of the Big Bear—there is something happening!" he shouted. "Take a look in there and see."

Fleming applied his eye eagerly to the end of the telescope. "It's another satellite and it's going to collide with Titan. They can't miss."

"But there isn't any such satellite!" Dale howled, fairly jumping up and down in his excitement. "There can't be a collision. Things like that don't happen any more."

"I'm telling you it's happening now!" Fleming cried. "They're almost in contact. There it goes!"

Dale stared out of the window in consternation. Titan had changed from a small round disk to a yellow blob with a brilliant flare on the limb.

Fleming removed his eye from the telescope, as if unable to view the destruction of a world he had left so recently.

"That means the base is destroyed. It's the end of everything."

Dale had been standing by his shoulder like one entranced. Now abruptly he returned to life.

"Don't you see that explains everything. Why the carrier wave didn't come from Titan but from a point

a little beyond it. Taggert and the crew escaped in the *Albatross* just in time to miss the crackup.

"That must be it," Fleming said solemnly. "I wonder where the ship is now?"

"Let's find out," Dale said, pressing a button by his side. A viewing screen flashed on beside the window on which the orbits of the seven inner satellites appeared as fine white lines with Saturn in the center. The instantaneous position of the *Albatross* was shown by a red dot while their own ship appeared in green. The motion of the *Albatross* with respect to Saturn was portrayed by a pen moving over a sheet of co-ordinate paper on a scale a thousand times greater than that of the illuminated screen.

"What kind of course is Taggert steering?" Fleming said, studying the line traced out on the paper.

"I wonder if he is steering," Dale said, frowning deeply. "You know how each man handles a ship in his own peculiar way. After awhile you can tell who is at the wheel by the kind of course he sets. Taggert runs a ship in a hit-or-miss fashion as if he were steering a motorboat. Now that line doesn't look like Taggert at all to me. It's much too smooth, as if he were proceeding on automatic pilot."

Fleming regarded the line dubiously.

"I doubt if Taggert would bother with the automatic unless he were about to land. He's a rugged individualist who likes to carve his own course through space."

"That's just what I was thinking."

"The only other possibility is that the ship is simply moving freely under gravity."

"In that case it's certainly following a peculiar or-

bit," Dale remarked, examining the figures that had just come up on the computer.

Fleming studied the point of light bobbing on the screen. "I would guess that it's an extremely narrow ellipse."

"It's narrow all right," Dale agreed. "It's so narrow you might say the orbit is practically a straight line."

"A straight line!"

"A straight line that passes right through the center of Saturn."

"But it can't do that. We've got to intercept it first."

"That's going to be rather hard to do without tearing this old ship apart."

"We can't let it go on as it is." Fleming laughed nervously. "Of course I was only joking when I said we'd follow it to Saturn."

Dale studied the figures on the computer long and thoughtfully. Then he punched the button that operated the screen several times in rapid succession until the space about Saturn was magnified to such an extent that only a portion of the ring system showed on the screen.

"As I see it, our only chance of intercepting the *Albatross* before it reaches Saturn is by following a high-speed hyperbola that cuts through here," Dale said, indicating a curve on the figure with the tip of his finger.

Fleming drew back aghast.

"You mean cut in between the planet and the rings!"

"I don't see any other way," Dale replied. "If we skirt around the rings we'll never make it in time."

"But there're only ten thousand miles between the

planet and the inner edge of the crepe ring. One little bobble and we're a wreck."

"It's a wild crazy thing to do, Mr. Fleming. I don't want to tackle it without your permission."

Fleming ran fingers that trembled slightly through his thinning gray hair. Then he turned to Dale resolutely.

"I feel there's something or somebody working against us at every step. This is a maneuver they won't be expecting. It may help to catch them by surprise."

"Then it's all right?"

"Give her full speed ahead."

There is nothing harder to do than put a spaceship into reverse, especially when every second is precious. The fact that Dale was able to accomplish the maneuver in ten minutes flat testified to his increasing skill as a pilot. There were times when he confidently expected to see the ship strewn around Saturn like another ring, but in the end it emerged from the ordeal intact.

They began to feel more cheerful now that they were committed to a definite course of action. Saturn was an immense, tawny-colored globe, cut by a black band formed by the shadow of the rings. The rings themselves were beginning to fan out as the ship rushed down under to slip through the space around the planet. Somehow that space seemed to be shrinking every second. Dale felt like a boy at the top of a steep hill who has to steer his bobsled through a gate a yard wide at the bottom.

"Is there any more beautiful sight in the solar sys-

tem," Fleming whispered, gazing at the rings which formed a vast arch spanning the heavens.

"Beautiful but deadly," Dale added. "A rainbow made of ice instead of dew."

"I have always thought of the rings of Saturn as a sort of cosmic fossil," Fleming remarked. "They appear to be the only remaining remnants of the days when the planets were in the process of formation."

"Think of the myriads of particles it takes to make up those rings," Dale said. He chuckled as an afterthought. "It's a good thing for us they're all gathered together so we know where they are."

"It certainly is," Fleming agreed. Suddenly he spun around as if he had been struck by a meteorite himself. "Say, how do we know they *are* all gathered together?"

"Well . . . the edge of the ring looks pretty sharp."

"But we don't *know*. The fact we can't see any particles inside the crepe ring doesn't mean there aren't any there. Why, there might be bushels of 'em—enough to make a sieve out of this ship."

"There could be," Dale admitted. "There probably *are*."

He rushed to the control board, then fell back helplessly.

"We're way inside the orbit of Mimas. We couldn't turn back now if we tried."

"Deuterium fluoride!" Fleming exclaimed. "We're in for it now."

"Hope this ship's got a good meteor bumper," Dale observed.

"Probably no good any more," Fleming groaned. "We never bothered to repair the blamed thing."



They looked at each other in dismay.

"There're some self-sealing injectors in the storage room," Fleming said. "Supposed to seal up a hole if a meteor goes through. We ought to put on our space-suits, too."

"Haven't time for the suits," Dale yelled, making for the storage room. "We'll be in the plane of the rings in another five minutes."

He was halfway down the ladder when he turned and dashed back over to the radio.

"That signal from the *Albatross*—it's growing weaker!"

Fleming glanced fearfully back and forth from Dale to Saturn. "Step it up, can't you?"

"I'll try," Dale said, moving a couple of indicators. The drone of the wave increased slightly, then faded again.

"Let it go," Fleming called. "Right now we've got to get those self-sealers."

A few minutes later, armed with the self-sealing guns, Dale and Fleming stood in the center of the room prepared for the worst. A dozen balloons drifted lazily about them.

"How long till we hit the gap?" Fleming asked.

"We're due anytime," Dale said.

"I don't hear anything yet," Fleming said hopefully.

"What's that!"

There was a sound like a pistol shot from the hull. Then another and another. They came like hailstones hammering against a tin roof.

"If that bumper only holds," Fleming moaned.

Even as he spoke the clang of an alarm bell filled

the ship while a red light began to wink over the control board.

"We're hit," Dale cried. "In this room, too."

"Watch the balloons," Fleming warned.

Although the hole made by the meteorite was too small to be readily seen, the hiss of escaping air was unmistakable. They were in dire peril, the worst that can befall a man in space.

The balloons caught by the escaping air were converging toward a region on the wall near the electric clock. Dale and Fleming scanned the surface frantically.

"There it is!" Fleming cried, sending a stream of fluid into a hole no larger than a pencil point. After a few minutes the bell ceased its clamor and the light blinked out. Gradually the crackle of the meteorites against the hull slackened and died.

The room seemed unnaturally quiet. Both men were about to relax when the same idea struck them both.

"The radio!"

The signal from the *Albatross* was barely audible. Dale attempted to amplify it but without result.

"It's fading fast," he frowned. "We can't follow it much longer."

"We've got to follow it," Fleming declared.

"But it's heading straight for Saturn."

"Then head for Saturn. Follow it wherever it goes."

## Chapter 14 *Under the Cloud Belts*

SATURN filled the heavens. Only it was not the familiar planet Saturn with the rings and cloud belts, but a broad expanse of uniform gray like a layer of fog viewed from above. First there had been a layer of thin haze that dimmed the stars and changed the sky from black to deep purple. As they descended deeper into the atmosphere of Saturn, the stars had been blotted out by great sheets of mist, which changed the tint of the sky from purple to milky-blue, and which now threatened to transform the sun itself into a mere yellow blob.

"Where are we now?" Fleming called from the window.

"I think we must be through the stratosphere by this time and pretty well into the convection layer," Dale replied. "Those gray sheets of cloud we're passing are probably ammonia cirrus."

"Remarkable color effects in some of these clouds," Fleming remarked. "Never saw anything like it on Earth. Brown and gray and there's a streak of blue near the horizon."

"It's been attributed to traces of sodium metal in the ammonia," Dale murmured, intent upon the radar screen. "The combination gives all kinds of colors."

The sunlight was fading rapidly. As the darkness closed in around them Dale reduced their rate of descent until they were barely creeping. There was no indication of solid ground as yet, but the radar

record was far too confused and erratic to be considered trustworthy. The carrier wave from the *Albatross* was barely audible now, the merest thread of sound emanating from a level about ten miles below them.

Fleming sauntered over from the window to watch the shifting blobs on the radarscope.

"It's getting hot in here," he complained, wiping his brow. "I believe I'll have a drink."

"Bring me one too, will you?" Dale said.

Fleming passed him the water container. "There's something we never figured on that's been causing me a lot of worry."

"What's that?" asked Dale, refreshing himself with a long draught.

"Water—we've scarcely enough to last us a week."

Dale hastily removed the bottle from his lips. "Don't I know it. We'll have to find the *Albatross* in a hurry or not at all."

Fleming inspected the screen anxiously. "We'll surely hit something solid in a few minutes."

"I think this is it now," Dale exclaimed, starting up as a new region began to loom rapidly larger on the radarscope. "Get ready to land."

Considering the difficulties under which they were operating, contact with the surface was comparatively easy. Aside from the initial shock and a little jolting around afterward, the ship survived the landing without serious damage.

A few minutes later Dale and Fleming emerged from the ship onto the surface of Saturn. The region in which they found themselves was shrouded in deep twilight, a barely perceptible grayness filtering down

from overhead like the dim illumination on the ocean bottom. Their torches did little to dispel the gloom. The beams were quickly smothered in the dense vapor pressing in around them.

Combined with the hazard of darkness, the ground under their feet was slippery and treacherous. Dale had only taken a few steps when he fell heavily to his knees. When Fleming went to his aid he, too, lost his balance and dropped clumsily beside him. Gravity upon the planet, instead of being about the same as upon Earth, seemed considerably greater. Moreover, after the long period of near weightlessness which they had experienced in space and upon the satellites, even a moderate force of attraction pulled at their muscles like lead slugs.

They struggled to their feet, holding tightly to each other to preserve their balance. The gloom lightened momentarily. Fleming took a few halting steps into the swirling clouds. In a few minutes he was swallowed up in the fog, only the glow from his torch remaining visible as a yellow blur.

"Fleming, come back," Dale called. "If we get separated we'll never find each other again."

"Where's your torch?" Fleming called back. "I can't see you."

"Right here. Got it?"

"Okay. I'm coming back."

There was a brief silence followed by a crunching sound and a groan. Dale could discern Fleming's light weaving uncertainly back and forth.

"Hurt yourself?"

"Not much. Hit a rock, I guess."

"Listen!"

As if from a great distance there came the sound of a rock bounding and crashing in the darkness, gradually growing fainter and finally vanishing completely.

"Watch yourself," Dale begged. "That rock sounded as if it fell a mile if it fell a foot."

Fleming stumbled on a few yards more.

"If I could only see!" he cried.

As if in answer to his plea, a sheet of rose-colored flame poured from a vent in the side of a mountain nearby, lighting up the region around the ship with a vivid crimson glare. Steam and lava poured from the mountain side, while the ground shook under the force of the blast. Dale and Fleming were hurled to their knees. They made no effort to rise but flattened themselves against the shuddering ground.

To his horror Dale perceived that the ship had landed upon a narrow ledge projecting along the edge of a sheer wall of ice. Peering cautiously over the side he gazed a thousand feet down into a sea tossing under the shock of the eruption. Sick and dizzy, he crept back to the sheltering wall of the cliff. The flame subsided, leaving the cavern in partial darkness.

Dale crawled to where Fleming sat crouched against the cliff staring at the flickering light of the volcano.

"This is awful. We'd better get out of here while we can. Before we're covered with lava or blasted into the sea."

Fleming regarded him blankly. The man seemed dazed, unable to collect his thoughts.

"See that light up there?" he whispered.

"I'm not blind," Dale retorted sharply. "What about it?"

"It's such a funny color. Kind of old rose . . . like a dress my mother use to have."

"The color probably comes from hydrogen gas. These giant planets are made of different stuff from the Earth. They're chuck full of hydrogen. Hydrogen shines with a purple color when it's real hot."

"That's queer," Fleming mused, "a great big planet like Saturn made up of light stuff like hydrogen."

"Saturn is like a big fat man. He weighs a lot simply because there's so much of him, but he doesn't weigh much per cubic foot. The Earth is like a little man who's all hard muscle."

"I wonder if we'll ever get back to Earth?"

"We won't if we sit here talking this way," Dale cried impatiently. "That volcano might cut loose any second."

There was a low rumbling sound from the vent while the ground heaved as if deep within the planet a giant were stirring uneasily. In desperation Dale seized Fleming and shook him frantically in an endeavor to arouse him to his senses. At length he succeeded in getting him to his feet, and by a prodigious effort half-dragged, half-carried him back to the rocket. Stepping inside the ship was like entering another world. Outside was nature in its most crude primeval state. Inside was an artificially created space, housing some of the most ingenious developments of the human mind.

The ship was now trembling so violently that Dale could scarcely walk. He had the most acute fear that

it would go toppling over into the sea any instant. Fleming began fumbling with the catch on his helmet but Dale grabbed his arm and propelled him toward the instrument panel.

"We haven't got time for that. Come in here and help me get under way."

The corner around the instrument panel seemed to have suffered more damage than the rest of the ship. Food and cooking utensils were scattered indiscriminately over charts and calculating devices. Dale brushed them aside and began setting up the problem on the computer.

"Set the automatic at two point seven six," he called to Fleming a few minutes later.

"Isn't that pretty high?" Fleming seemed largely to have recovered from his dazed condition.

"It's that or nothing. I'd like to go higher but we don't dare risk it in this dense atmosphere."

"Hope we don't run into anything."

"If we could set the ship down on this planet we ought to be able to get it out again."

Dale took a last precautionary glance at the instrument board.

"All set over there?"

"All set."

Dale pressed a button, then slid across the room into his bunk. Fleming was already stretched out on the one beside him. Dale closed his eyes and began breathing deeply, trying to compose himself for the take-off. He started counting deliberately . . . one . . . two . . . three . . .

Dale stirred on his bunk, glanced at Fleming, and



resumed counting. He had reached a hundred when Fleming interrupted.

"What's holding us?"

"I don't know."

"What did you set the timer for?"

"A minute."

"A minute! It's been three minutes already."

After an instant's hesitation Dale hurried over to the instrument board. The needles on the illuminated dials were quivering as if anxious to be off except for three, which stood at zero inert and dead.

"No wonder," Dale exclaimed. "Look at that."

Fleming's jaw dropped. "The whole circuit must be shot!"

As they stood irresolute the ship trembled so violently they were forced to grab the edge of the panel for support.

"Where's that wiring diagram?" Dale demanded, shouting to make his voice heard above the din.

"Ought to be down here someplace," Fleming said, pulling out a drawer.

"May be just a loose connection. Rip the panel out—"

But Fleming already had the panel out and was systematically tugging and probing at the maze of colored wires that constituted the starting circuit. Dale went to the rear of the ship and made a hasty inspection of the fuel-tank assembly. At the end of ten minutes they had found nothing. At the end of thirty minutes they had found nothing. At the end of an hour they had to admit defeat.

"Looks as if the trouble's got to be either in the

feed line or the fuel injectors," Fleming said, frowning deeply. "Getting in there will be a big job. Take us a day or two at least."

Dale took a wrench from the toolbox and began moodily opening and closing the jaws.

"I don't think there's anything wrong with this ship."

"It won't work, will it?"

"I mean nothing that we can fix. I think it's the same thing that's been wrong ever since we landed on Titan. Until we find out what it is and how to overcome it we'll never get anywhere."

"I wish I knew how," Fleming muttered.

Dale gave the wrench a final twist and tossed it back in the box.

"I wonder if we haven't been making a serious mistake. Ever since we came here the whole bunch of us has been scared stiff. It's been like one long Halloween celebration."

"It certainly has."

"I'm convinced that somebody objects very strenuously to our presence in this system. They've done their best to throw a scare into us and you've got to admit they've certainly succeeded. At every step we've done exactly what they wanted us to do."

"What would you suggest?"

"Well, why don't we try to do exactly the opposite of what they want? They figure we're so scared we won't let each other out of sight for a minute. So why don't we lay a trap for them? One of us deliberately exposes himself while the other stands guard from a safe distance. That way we might be able to get a clue as to what's going on here."

"Seems to me if it was that easy we'd have found the answer long ago."

"Let's assume that somebody is working against us. Call 'em Saturnians for want of a better name. What do we know about these Saturnians? Well, they apparently have the ability to get a man out of sight in a hurry. And they can knock out electrical communications in a hurry. But they also appear to be made out of solid material, that is, they don't go flitting through space like a radio signal. You remember Chuck claimed he saw some in the bunkhouse. I've never told this to anyone before but I'm sure I saw them, too. And they left footprints outside the door."

"That's true," Fleming admitted.

"It looks to me as if the Saturnians can make use of some physical principle which we don't understand and which seems like pure magic to us. But even if we don't understand it, perhaps we can deduce something about the way it works."

"It certainly seems to work in a hurry," Fleming remarked.

"I think we can go a little further. I have a hunch it is effective only over a limited area. In other words, the Saturnians can knock out the electrical communication system over a region the size of this ship, but not a region the size of a town or city, for instance."

"What makes you think so?" Fleming asked.

"Consider the evidence. The light dimmed there in the bunkhouse but not in the storage room where the guns were located. Our flashlights wouldn't work in that cave but they were all right outside. Nothing would work in Dearborn's underground chamber yet

we had no trouble with our setup a few hundred feet away."

"Maybe so," Fleming admitted cautiously, "but that still leaves plenty to be explained.

"Let us assume as a working hypothesis that the Saturnians have a device that makes any kind of electro-magnetic energy inoperable over a limited area. Since all matter is fundamentally electrical in nature, we'll also assume that it can affect living organisms as well as inanimate matter. Thus one man, or even a group of men, could have their memory blacked out temporarily."

"But they'd remember later on," Fleming objected.

"Not necessarily. Suppose you go to a moving-picture show and fall asleep just as the hero is about to tumble over the side of a cliff. While you are sleeping the man next to you gets up and leaves. You slumber soundly through the whole show and by a coincidence wake up just as the hero is going over the cliff again. You are not aware of a lapse of time. Everything seems to have gone on smoothly except that the man who was sitting next to you a moment ago has suddenly disappeared. And you never saw him leave."

Fleming shook his head doubtfully.

"I make a noise like a buzz saw when I go to sleep. They'd throw me out."

"Now what happens after a man disappears?" Dale hurried on, carried away by his own enthusiasm. "Naturally everybody is scared they'll disappear, too, so they all stick as closely together as possible. But that makes it easier for the Saturnians to work on them, for then they can blot 'em out a dozen at a time.

Whereas if they were spread over a ten-acre field, each would have to be taken on singly."

"In other words, you think our best chance of catching a Saturnian in the act is to stake out one man while the other fellow watches from a distance?"

"Well, you've got to admit the platoon system hasn't been very successful so far."

Fleming grinned slyly. "Seems to me, you were the fellow who claimed there couldn't be any such thing as a Saturnian, not so long ago."

"Maybe I was a little hasty," Dale admitted rather sheepishly. "Of course, these Saturnians I was postulating—"

He never finished, for the ship pitched so violently under the impact of another eruption that he was thrown forcibly against the opposite wall.

"How about it?" Dale said, picking himself up off the floor. "Are you willing to give it a try?"

Fleming licked his dry lips. He clutched at the side of his bunk as the ship lurched and rocked.

"I'm willing to try," he gasped. "Only we'd better shake hands on it first. I've got an idea this is the last time we'll be seeing each other for awhile."

## Chapter 15 *Fleming Goes*

PREVIOUSLY Dale had lived in constant dread of being pounced upon by a Saturnian and borne away in triumph to his secret hideaway. Now for the first time he actually began to wish for a little activity on the part of the planet's inhabitants. For three hours he and Fleming had deliberately left themselves open to attack and so far not a thing had happened. It was downright annoying to be ignored in this way, especially since they were in such desperate need of a break in their situation.

After considerable discussion they had decided to separate for four hours, one remaining by the rocket while the other went to a point about half a mile below on a neck of land extending into the sea. There had been an argument about who would stay by the ship, which was finally decided by tossing a coin. Now, after three hours of unceasing vigilance, nothing more exciting had occurred than an occasional threatening rumble from the volcano next door.

Strange thing, Dale mused, how quickly one got used to little disturbances, such as earthquakes and volcanic eruptions. Volcanic action was apparently a normal part of life on Saturn, like rain and sunshine upon the Earth. Thus, after only a few hours, he had developed a contempt for temblors that merely stirred up the dust and sent a few pebbles tumbling down the cliff. In fact, he didn't begin to show much interest until a shock ripped open a crack in the side

of the mountain and sent giant waves surging against the foot of the cliff below.

During the last hour his hardest fight had been to keep awake. Every minute was an agony. Again and again he caught himself just as he dropping off. His mind dwelt constantly on the bunk inside the ship. Earthquakes or no earthquakes, he was going to dive in there the minute those four hours were up and get some rest. A long, cold drink of water would taste good. He'd like to sleep in a tubful of water . . .

His head snapped up with a jerk. This time he couldn't be sure. He might have been asleep for a couple of minutes or maybe even as long as ten. He hurried to the edge of the cliff and sighed with relief to see Fleming still pacing the rocks below. He glanced at his watch. Only ten minutes more. He would have to stay on his feet from now on. If he sat down he would doze off in spite of anything he could do.

*Perhaps this was the way it began!*

Dale was wide-awake in a flash. He glanced anxiously around but there was only the cliff and the drifting vapor and the ice and the rocks. After all it was perfectly natural that he should feel drowsy. He and Fleming had been on the alert for twenty-four hours without a break, but the excitement that had kept up their nerve during the flight from Rhea was beginning to wear off. It would probably have been better to have had some sleep before they tried this experiment, but Dale had been so sure it would work.

A quake began to develop that gave promise of becoming something really special, a first-class Grade-A upheaval with all the trimmings. The whole chasm

was shaking now. Boulders were thundering down the side of the mountain and the mountain itself was tottering. Lava poured in a dozen molten streams from the side of the volcano. Just when Dale was sure the whole cliff was going to topple into the sea the disturbance began to subside. There were still occasional tremors and rumblings and bursts from the volcano but the main shock had passed.

Dale crawled along the cliff to where the *Maia* lay half-buried under dirt and gravel. Thank goodness the air lock was still unharmed. There were several dents in the hull, but he could find no serious injuries.

Then he stopped short unable to believe his eyes. Water was gushing from a crevice in the rocks behind the ship, gallons and gallons of beautiful clear sparkling water. All the water you could drink in a week of Sundays. Enough water to float a spaceship.

Dale suppressed a mad impulse to dive into the stream. But that wouldn't be any good. Go in the ship . . . get a bucket . . . anything that would hold water. The sight of so much perfectly good  $H_2O$  going to waste made him wild. He started for the hatch, then did an about-face and skidded to the side of the cliff. Perhaps Fleming hadn't survived the quake. But there he was plodding back up the mountain side toward the ship. Dale waved his arms in an attempt to imitate a man swimming and taking a drink at the same time. Fleming stood watching for awhile; presently he shrugged his shoulders and continued on up the mountain. It was plain that he had suspected Dale was a little touched all along and now he was sure of it. Well, no matter, that could all be explained later. Main thing was to get some of that water.



Curious how hard it was to find anything resembling a bucket in a spaceship. There were some cooking utensils but they were all small. Dale finally emerged with a glass container from the refrigerator. A few minutes later he crawled inside the ship triumphantly bearing a tankful of water. He tore off his helmet, dipped up a cup of the liquid and gulped it down. Oh, how delicious it was! He drank another glass and another. A great weariness descended upon him. Now that the vigil was over and he had plenty of water he could get that rest he had been promising himself for so long. He tore off his suit and flung himself down on his bunk. He was so tired he almost cried with relief. Sleep swept over him like an engulfing wave.

Dale awoke feeling as if he were the victim of an experiment in alchemy that had backfired upon its discoverer. His legs and arms seemed to be made of lead. They were so stiff and sore he could hardly lift them off the bed. His mouth and throat burned as if he had swallowed a strong corrosive.

He had expected to wake feeling refreshed and instead he felt as if he were petrified. The electric clock showed he had only been asleep about an hour. He dragged himself over to the table, scooped up a glass of the water, and let it trickle down his throat. He drank another glass, then dashed some over his face and head. The shock of the liquid against his skin revived him slightly, but soon he felt even worse than before, if possible. There was something he should do but what was it? He put both hands to his head trying to think.

Fleming! Where was Fleming? He certainly should

be back by this time. With a vague feeling of disaster gnawing at the back of his mind Dale struggled into his spacesuit and crawled through the hatch. The flame was still flickering over the volcano and the vapor was still drifting over the sea. But Fleming was nowhere in sight. Furthermore, there was no evidence that he had returned from the point below.

Sick and dizzy as he was Dale knew there would be no rest for him until he had located his companion. He started down the mountain at a jog trot guided by Fleming's footprints. By the time he reached the bottom he was so weak he could hardly stand but forced himself to go on. He was almost to the sea now. Another turn would bring him to the promontory where Fleming had been standing guard. He must be there. He was!

Dale tried to call to him but his tongue was so swollen the words stuck in his throat. Finally he got them out.

"Fleming! Fleming!"

Fleming did not stir. In the dim light his figure wavered and blurred and for a moment seemed to vanish altogether. Dale called again. There—he had heard him. Fleming had turned and was stepping over the rock very slowly and carefully. Only he was headed in the wrong direction. He was going farther out toward the sea instead of back toward the cliff.

"Fleming, over here!"

Fleming stopped at the edge of the sea with his head slightly cocked to one side as if listening intently. Presently he started as if in response to a long-awaited signal and began moving toward the sea again. A creature was crawling over the rocks to

meet him. A creature with arms and legs resembling those of a man but with the glistening smooth skin and bulging eyes of a salamander. The creature seized Fleming in its leathery arms. Fleming did not resist. He lay with his head thrown back and his arms and legs dangling limply like a doll.

Involuntarily Dale started toward them. The creature stood half-erect regarding him out of its heavy-lidded eyes, its mouth curved in an amiable grin such as one sees fixed on the face of a toad or newt. Then, with a motion almost too quick for the eye to follow, the creature disappeared with its prey behind the ledge of rock.

Dale tried to follow them but he was too weak and shaken to take more than a dozen steps before his legs collapsed beneath him. The rock was hard as flint and its edges sharp as broken glass; but in his agitation he scarcely felt it. For a long time he lay there too miserable to move. At length he regained his feet and started plodding toward the mountain. It seemed to take forever to reach the ledge on which the *Maia* rested but he finally made it. Although he was so tired he could barely drag his feet over the ground, his head was clearer and his former nausea and lassitude were gone. He stood for a moment gazing down at the sea with a certain sense of horror mixed with elation. Now that he had gotten a good look at one of these creatures some of his fear of them had departed. They were a formidable foe but still they didn't appear completely invulnerable. They must have an Achilles heel somewhere about them, and he meant to find it.

He had to grope his way along the ledge a step at

a time to find the spaceship. Only a pale bluish glow flickered over the mouth of the volcano, as if the internal fires of the planet were burning low. But when he reached the ship the water was still gushing out of the rock with a happy gurgling sound. That was one good deed that the volcano had done.

As always the brightly lighted interior of the ship came as a welcome contrast to the harsh world without. Dale's first act after removing his suit was to inspect the food supply. Only an hour ago he could not have endured the thought of food but now he was extremely hungry. He put some frankfurters and a can of vegetable soup in the oven and then lay back on his bunk and reviewed the course of events since landing on Saturn. His strange sickness . . . the sight of Fleming in the clutches of the amphibian man . . . and his scramble back up the cliff.

He must have dozed off, for when he glanced at the timer on the oven again the hand stood at zero. He yawned and blinked trying to drive the sleep from his eyes. The room seemed unaccountably dim.

A tough leathery band was creeping around his chest. Dale sprang from the bunk tearing at the band with all his strength. Another band encircled his chest, pinning his arms to his sides with a grip of steel. Dale twisted and squirmed but it was useless. The bands only tightened.

In the failing light he perceived a face peering down into his, a face with bulging reptilian eyes and a broad slit of a mouth turned up at the corners in a fixed, complacent smile.

## Chapter 16 *Inside Saturn*

**H**E'S COMIN' out of it."

"What did I tell you?"

"Give him some more air."

It was a strange sensation to hear people talking about you when they thought you couldn't hear them. It was like dying and coming to life again. Only unlike characters he had read about in books Dale was quite sure he wasn't dead. In fact, he felt very much alive and eager to hear what had happened to him. Those voices sounded familiar.

He opened his eyes.

Taggert was bending over him vigorously massaging his wrist. The captain's rough battered face broke into a grin as Dale looked up. There had been a time when Dale thought the captain had the homeliest face he had ever seen on a human being but now he looked positively handsome.

"I told 'em you can't keep a good man down."

Dale sat up and looked around. Why, the whole crew was there: Fleming and Taggert and Collins and Chuck and MacAllister and all the rest. It was like coming home.

"I suppose I might as well ask it and get it over with. Where am I?"

Collins was beside him now.

"You're still on Saturn. To be exact, you're about a couple of hundred feet underground in a vault the inhabitants keep reserved for their special guests. As near as we can make out, the whole planet is a honey-

comb of passageways, with rooms branching off here and there like this one. Don't know how deep they go. Wouldn't surprise me if they'd burrowed all the way down to the central core."

Dale had recovered sufficiently to take note of his surroundings. The walls appeared to be carved out of some light colored igneous rock, probably granite, which had been worn so smooth in places that it had acquired a high degree of polish. The room had been constructed purely for utility. There was no ornamentation of any kind. The chamber was illuminated by a steady uniform radiance, apparently originating in the atmosphere itself like the aurora. Most surprising and gratifying feature was that the room was filled with real air; or at least oxygen mixed with some inert gas in about the same proportions as air.

"Well, I'll say this much for Saturn," Dale remarked, "it looks better underneath than it does on the outside."

"I've been in some hotels that was a lot worse," MacAllister declared. "The room service here is kind of slow but you can't really complain."

"Incidentally, how long have you been here?" Dale asked.

"Ever since you landed on Saturn yourself—some of us longer," MacAllister replied. "Only we came here by escort. When the Saturnians moved in on Titan we sure didn't have much to say about it. They grabbed us, tossed us in the *Albatross* and shoved off. It happened so fast it was all over before we hardly knew it was started."

Dale smiled sympathetically.

"They sent a deputy from the strong arm squad after me, too. Once he clamped down I never had a chance."

"Same here," Taggert grunted. "I tried to tangle with one of them lungfishes. They don't know their own strength."

"We didn't know they was doin' us a good turn till this other moon come along," MacAllister continued. He closed his eyes in a spasm of pain. "It sure made a splash."

"Then the camp was destroyed?"

"Destroyed! It liked to ruined the whole side of Titan."

"But what was it?"

MacAllister shrugged. "That's what we'd like to know. It wasn't anything you'll find in the books."

"Must have been some asteroid," Dale commented. "We know there are a few like *Hidalgo* that go out as far as Saturn."

He rose and stretched his legs, at the same time feeling gently of the bruises on his arms where the Saturnian had grasped him.

"Well, you fellows look pretty healthy," he remarked. "That is, they seem to have treated you pretty well."

"We can't complain," Collins said. "What bothers us most is—what happens next?"

An uncomfortable silence descended over the room. Apparently nobody seemed to know.

"What have you been able to find out about these creatures so far?" Dale inquired. "Have you been able to get any line on them at all?"

Fleming shook his head regretfully.

"Not much, I'm afraid. As you suspected, they evidently have some means of rendering electro-magnetic source of energy inoperable over a limited region of space. That accounts for the way they were able to quench the lights and stall the rocket and black out our minds. It goes as deep as the nucleus of the atom."

"They must have attained a high degree of technical knowledge," Dale murmured.

"No doubt about it," Collins broke in. "Still . . . they're kind of dumb in some ways, too."

"That's right," Taggert chuckled. "For instance, they never got next to the fact we left our carrier wave on when they took over the *Albatross*."

"Lot of good it did us," Chuck grumbled. "They knew if they left that carrier wave on, all the rest of our bunch would tag along after us. That way they made a clean sweep. They got the *Perihelion* and the *Equinox* and the *Albatross*."

"Aw, they're not that smart."

"They're plenty smart."

MacAllister waved one hand in a weary gesture.

"I don't care how smart they are. What I'd like to know is when do we eat next?"

"Quiet," Fleming whispered. "I think they're coming now."

The air lock at the end of the room opened, admitting five creatures of the type Dale had encountered on the *Maia*. The men watched in sullen silence while the Saturnians distributed food among them, moving in and out with the same sinuous motions of small reptiles and amphibia upon the Earth. Their most



repulsive feature was a grotesque resemblance to human beings. You just caught a flash now and then when they were poised in certain attitudes. Take that one standing rigidly on guard there by the door. How many times had you seen a man staring at you from a park bench with that same dull vacant expression in his eyes? And their little self-satisfied smile; was it not a perfect replica of the complacent grin on the face of a man rising gorged from the dinner table?

Gradually Dale became uncomfortably aware that the Saturnians were paying him an unusual amount of attention. After inspecting him closely, the largest—who seemed to be the leader—waddled over and tugged gently at his arm while the others stood in a semicircle as still as statues regarding him.

"Looks as if they desired the pleasure of your company," Collins said.

"Why do they want to pick on me?" Dale murmured uneasily.

"You were the last one they dragged in here. Maybe they think you're the top man of the outfit."

"What do you think I'd better do?"

"You'd better play along with 'em. What else can you do?"

It was quite obvious that the Saturnians wished Dale to accompany them on some mission outside the room. While the men stood by watching helplessly, Dale got into his spacesuit and indicated to his captors that he was at their disposal. The leader, who seemed to regard Dale as his personal charge, conducted him through the air lock into the corridor outside with the proud smile of a butler ushering the

guest of honor to the reception chamber. They hustled him along the corridor, carrying on a conversation in guttural tones which seemed to consist mainly of questions and answers. To his astonishment Dale fancied that he occasionally caught a fragment of familiar-sounding speech. Twice he thought he heard the word "deal" and several times he was sure he heard "okay" repeated in rapid succession. He had expected to find some wonderful things on Saturn but nothing quite so wonderful as this.

At first Dale tried to keep track of the route along which he was being escorted but soon gave it up as hopeless. It was like trying to follow the cavities within a sponge. The walls were already so covered with scratches that, in the short time available, it was impossible to blaze a trail that could be readily identified. At length he became so thoroughly bewildered that he accompanied his captors passively wherever they chose to go, without the slightest hope of ever being able to retrace his steps.

After wandering for about an hour the party stopped before a solidly constructed metal door, the first artificial device they had so far encountered. A panel slid back in the wall revealing a capsule-shaped tank with a projection on the side like the hatchway leading to the air lock of a spaceship. The leader twisted a wheel in the center of the hatch, threw back the cover and motioned for Dale to enter. The Saturnian crowded in beside him, shut the door, then opened another leading to a larger chamber shaped like a sphere. There were no seats or benches or other conveniences—simply a smooth expanse of bare, shin-

ing wall. After some hesitation Dale entered and sat down in the middle of the sphere. The Saturnian closed the door, pressed a button, and sat down beside him with the most serene smile on his fat face.

For what seemed like a full minute nothing happened. Then gradually Dale became aware of a familiar sinking sensation in the pit of his stomach. The sphere must be falling, and fast, too, from the way it felt. Gradually the sensation eased off. So they were taking him down into the depths of the planet for some nefarious purpose where these creatures probably spent the main part of their miserable lives. He cast a nervous glance at the creature beside him. It appeared to have fallen sound asleep with its legs and arms spread out over the sphere as if it hadn't a care in the world.

As they continued to fall, minute after minute, Dale became oppressed by the thought of the tons and tons of matter above them. *Pressure*. How little was known about it. Scientists had conducted extensive experiments on the properties of matter under low pressure, or in a vacuum, but the opposite field of matter under high pressure had scarcely been touched. Dale knew that all sorts of queer things happened when matter was subjected to terrific compressional forces. It was as if you were in a different universe, where electricity played strange tricks, and elements—ordinarily gases—were turned to hard solids. Yet pressure in itself was not a deterrent to life, as witness the fragile marine creatures found at the bottom of the ocean. To exist under high pressure an animal only needed to adjust the pressure within

itself so that it exerted a force outward equal to the force pressing against it on all sides.

At last they were slowing up. Again Dale felt that familiar sinking sensation in the pit of his stomach. The Saturnian stirred sluggishly and half-opened its heavy-lidded eyes, gazing at Dale with the complacent expression that a fond father might bestow upon his only son. There was a slight jar. The Saturnian rose and stretched himself. The sphere had landed.

## *Chapter 17* Before the Council

PREVIOUSLY the sphere had been enveloped by profound silence, but now there was a scraping and clanking against the walls, as if it were being manhandled by some powerful type of instrumentation. The Saturnian remained quite unperturbed, blinking occasionally and smiling its placid, superior smile. Ever since the creature had taken him in charge, the conviction had been growing upon Dale that somewhere they had met before. This was a little hard to reconcile with the fact that this was Dale's first trip to Saturn; nevertheless, the feeling persisted. Then on the way down it had come to him in a flash—this Saturnian was none other than Lancelot, the old companion of his childhood days enlarged about a thousand times. In his early youth he had lived beside a lake where he had spent many happy hours playing with the salamanders that flourished along its shore. There had been one—which he had named Lancelot after his current hero—that had been his special pet. It was one of the few bright spots in an otherwise lonely boyhood, and he had been disconsolate for days when Lancelot disappeared down the mouth of a particularly large green garter snake. Now it rather irritated him that their positions were reversed: he was the pet and Lancelot the indulgent master.

Lancelot entered the air lock and pressed the button that opened the door outside. Dale braced himself, expecting a tidal wave to rush in; instead the panel flew back revealing the interior of another small

spherical chamber, a sort of bathosphere barely large enough for a man to enter without being badly cramped.

Dale regarded the interior of the sphere with some mistrust. The Saturnian made motions with its four-fingered hand, plainly indicating that he should enter. Still Dale held back. Suddenly he had an inspiration.

"Okay?" he inquired.

Lancelot positively beamed. "Okay! Okay!" he croaked.

Dale hesitated no longer. He climbed inside the bathosphere as he was bid.

And now began the strangest part of the journey. Through the heavy windows in the side of the sphere, Dale saw that he was in a region filled with some substance that was neither liquid nor gaseous, but appeared to possess some of the properties of both. More than anything else he could think of, it reminded him of pea soup, except that it was faintly luminous and partially transparent. Objects at a distance of a hundred feet were fairly distinct, but beyond that they blurred and dimmed like out-of-focus images on a motion-picture screen.

The scenery around him resembled masses of taffy candy that had been twisted and distorted into every form imaginable and then left to cool. Dale suspected that these remarkable forms had been produced by some cataclysm in which hydrogen in a highly turbulent state had suddenly been forced to solidify under enormous pressure. In places the walls were streaked by narrow veins of a silvery substance—probably hydrogen in the metallic state. There were other mineral structures whose nature he could not even

guess: giant crystals growing out of the rocks like the petals of a flower and huge stalactites hanging from the cavern roof like glittering icicles.

But the most amazing sight was the inhabitants of the region themselves. The landscape was crawling with them. They swarmed over the cavern walls and over each other. They leaped upon the bathosphere. They pressed their grinning faces against the window, feasting their eyes upon the creature huddled within. They did not move out of the way of the bathosphere—they flowed.

Gradually the character of the region through which Dale was being conveyed began to change. The walls were receding and the light was growing brighter. Presently they entered a natural amphitheater formed of shelving walls several hundred feet high and covered with Saturnians in various recumbent positions. But unlike those outside, these lay so still that one had to observe closely in order to be sure they were really alive and not stuffed with sawdust or in a state of suspended animation. Occasionally one would become suddenly animated, running about and waving his arms, while his fellows watched him resentfully as if annoyed at having their rest disturbed. But for the most part they crouched motionless, holding various fixed attitudes as if unable, or unwilling, to alter their strained positions.

At the center of the arena was a raised space occupied by three Saturnians who watched the approach of the bathosphere with a certain benign gravity. They were in some subtle way distinguished from those on the shelves around them, although the difference was not pronounced: a slightly thicker skin

perhaps, a tail more elongated for jumping, and with more powerful development of the throat muscles. But what set Dale's heart to pounding was the sight of another sphere in their midst similar to the one in which he was encased. And unless his eyes were playing tricks upon him in the uncertain light, there was a figure within the sphere that looked very much like a man!

Dale had been keeping to the back of his cage in a vain effort to hide from the prying eyes of the Saturnians, but now he pressed his face against the window, eager for a look at his fellow captive. He had the most powerful premonition that some of the secrets of this perplexing ghost world were about to be revealed to him at last. He held his breath as the face within the sphere grew more distinct. It certainly looked like —It *was*!—the face of the man with the twisted lip! The same face he had seen that night on Rhea.

The Saturnians maneuvered him about until he had a clear view of the other gondola as well as the three judges upon the raised space. Lancelot touched a button upon the side of the gondola. Instantly the interior of the sphere was alive with sound.

"So you're here at last." The voice was kindly if not exactly cordial.

Dale laughed. "I didn't have much choice in the matter."

"You didn't have to come here, you know." There was a touch of asperity in the other's tone.

"Is that so? I thought I was brought."

"Oh, I don't mean down here. I mean to Titan—to the whole Saturnian system."



"I was acting under orders. I came to establish a colony."

"Yes, I suppose that's true. Oh, well, it doesn't make any real difference, of course."

"Incidentally," Dale remarked, "haven't we met before? There's something about your face . . ."

"My mouth perhaps." He touched his lips with the tips of his fingers. "Excuse me for not introducing myself—Martin Dearborn the Third, at your service."

Dale gazed at him with the most intense curiosity. "You mean you're Captain Dearborn's son?"

"His grandson. I'm third generation. Born right here on Saturn."

"You mean you've spent all your life in this . . . this place?"

"Is it so bad?" Dearborn inquired.

"Well, I'd never pick it for a permanent homesite."

"Of course I wouldn't know, never having been any other place."

"I suppose not," Dale said thoughtfully. Suddenly he aroused himself. "I'm Dale Sutton from the Space Academy—"

"I know," Dearborn interrupted. "I've known all about you for a long time."

"Well, in that case," Dale said, "maybe you can tell me what this is all about. What are these creatures going to do with me?"

"Creatures?"

"The Saturnians or inhabitants of this planet or whatever you want to call them."

Dearborn suddenly broke into a stream of guttural sounds evidently addressed to the guards around him.

Two of them moved his gondola until the windows of the two spheres almost touched.

"Okay! Okay!" he called. "Now we can really talk."

"Did I hear the word *okay*?" Dale asked.

Dearborn's mouth twisted into a smile.

"I can speak their language readily enough, but only a few of them have bothered to learn much of our speech. After all, why should they? They're so few of us left now."

"You mean there are other men on Saturn?"

"Men *and* women," Dearborn corrected. "The original colonists were a hardy lot, but out of the two hundred that settled here only a dozen of their descendants are left now."

"Whatever did the Saturnians do to them?"

"Oh, nothing much. They simply wanted to keep them under control. The Saturnians are entirely different from people like you. They've gotten in an awful rut—" He broke off sharply. "Tell you all about it later. The council wants to ask you some questions now."

"The council?"

"The outfit that runs this place. Actually it just about runs itself. Now here we go. Somebody wants to know how long it took you to get here."

Dale spent the next hour answering questions from the three Saturnians on the raised space, as well as those perched on the shelves of the amphitheater. For the most part the questions seemed of a rather trivial character concerning the structure of the spaceships and methods of procedure in carrying out an order. Also, they asked the same questions over and over again. Thus Dale had to tell them a dozen times why

he had wanted to measure the magnetic field of Titan. He explained to the Saturnians that such information wouldn't be of the slightest practical use. He had made the measurements merely because he had wanted to obtain new knowledge. But would that knowledge be of any practical value to the expedition, the Saturnians asked. No, Dale admitted, it would not be of the slightest practical value. Then why go to all that work, they demanded. Dale was never able to make it clear to them. The Saturnians seemed incapable of grasping an idea that did not lead to an immediate tangible gain.

At length Dearborn informed him that the Saturnians were satisfied for the time being and that the interview was at an end. By then Dale not only felt thoroughly tired and uncomfortable but he was also decidedly peeved at his captors as well. It seemed to him that they had gone to great effort to bring him several thousand miles down through the crust of the planet for the sole purpose of asking him a lot of piffling questions that revealed nothing except their own ignorance and stupidity. Yet the Saturnians must be clever, intelligent creatures, for certainly they possessed technical skill of a high order.

The three members of the council crawled down off their lofty perch, while the members on the shelves higher up yawned and teetered back and forth on their forelegs. Dale felt his gondola begin to move.

"When do I get out of this thing?" he called to Dearborn.

"Pretty soon."

"But I'm tired of being cooped up in here."

"You can't get out now. You'd be crushed to death."

"I know, but what happens next?"

Dale never heard the answer, for at that moment the communication system was cut off, leaving him in sudden silence. He sank down in the bottom of the gondola pretending not to notice the Saturnians peering in at him from all sides. Suddenly he lunged at them savagely, beating against the thick glass windows with all his strength. The creatures scurried away only to return a few seconds later with heavy reinforcements. Presently he ceased to rage at them but sat staring glumly ahead, too wretched to wonder or care what was happening to him.

It soon became clear that he was being taken back along the same path over which he had come. He recognized a formation that had reminded him of a character in *Mother Goose*—and there was that huge block of rock crystal. And there was the air lock leading to the elevator. His spirits began to rise immediately.

Thirty minutes later he and Lancelot emerged from the elevator into the same natural passageway through which they had entered. A committee of four was still awaiting them, but whether it was the same identical four, Dale could not be sure. He fancied that they were the same, for he was beginning to notice little distinguishing traits that had escaped him before: this one had a snub nose, another had eyes that were set wider apart than usual, and another had a mouth that turned down a trifle at the corners, contrary to the prevailing mode. Would a time ever come when their faces would be as readily distinguishable as those of human beings?

The party halted before a door in the wall. Lancelot

escorted him through the air lock. Dale caught a glimpse of people in a room beyond. It was good to be among your own kind.

"Well, here I am."

The words died in his throat. These were not the members of the crew, but men and women who stood scrutinizing him with the same eager, fixed expressions of the amphibia men. It was like waking up in a waxworks.

Dearborn sauntered in from the adjoining room, a book beneath his arm.

"Made it back all right, eh? I was about to tell you when they cut us off." He indicated the men and women at work around the room with a casual wave of his hand. "These are the people I told you about—the last descendants of the illustrious Captain Dearborn and Company."

## *Chapter 18* *The Invaders*

DALE bowed uncertainly. "How do you do?" he murmured. Nobody moved or spoke. Dale began to fidget under their watchful eyes.

"I'm afraid we're rather lacking in the social amenities," Dearborn apologized. "I'm more familiar with your language and customs, since I've made a careful study of the motion pictures and microfilm brought here by our pioneer ancestors. Also, I flatter myself that I've inherited some of my grandfather's inquiring spirit along with his cleft lip. But my companions have gone the way of the Saturnians. They behave like Saturnians. They think like Saturnians. To all intents and purposes they are Saturnians."

Dale looked wearily around.

"I wonder if I could have a glass of water?"

"Certainly," Dearborn nodded to one of the women. "Clara, will you fetch a pitcher of water to my study, please?" He took Dale by the arm. "Suppose we come in here and talk things over."

Dale followed him into the next room which was evidently used as a study. There was a long table in the center covered with paper and writing material, and shelves filled with books set in the walls. There was a certain mystic charm about the apartment. It might have been the workshop of some scholar or enchanter of the Middle Ages.

As they seated themselves at the table, the woman entered with a pitcher of water and tumblers.

"Thank you, Clara." Dearborn filled the tumblers and was about to pass one to Dale when he raised it to his lips and sipped of the liquid suspiciously. Then he nodded and passed the other tumbler to Dale. "Go ahead—drink all you want. It's perfectly harmless."

Dale took a long drink. The water was deliciously cool and refreshing.

"One of the few good things I've found on this planet," he said, setting down the tumbler.

Dearborn eyed him quizzically. "Maybe you've been lucky so far."

"That's news to me."

"All the water on this planet doesn't agree so well with organisms like ours."

Dale glanced up quickly. There was a sudden suspicion stirring in the back of his mind.

"It's all pure water," Dearborn added reassuringly. "But unfortunately there are two kinds of pure water on Saturn. The most abundant is  $H_2O$ —hydrogen monoxide—the kind you're used to drinking back on the Earth. But there are also sources of heavy water on Saturn—deuterium monoxide or  $D_2O$ —and that's something entirely different."

"You mean there's enough deuterium, enough of the heavy isotope of hydrogen in the water on Saturn, to make a real difference?" Dale exclaimed.

"Remember this is a hydrogen planet," Dearborn said. "We've found springs where the concentration of deuterium is as high as ten per cent."

"So that was what was the matter with me!" Dale lifted the tumbler and sipped the water cautiously. "But how can you tell without making an analysis?"

"If the concentration is above five per cent you can tell the difference by the taste."

"A kind of burning sensation?"

"That's it. Only you'd never notice unless you were on the lookout."

Dale laughed grimly at the recollection.

"I couldn't imagine what had happened to me. I was completely knocked out, thoroughly stupefied. I blamed it on the Saturnians."

"Can't blame them for everything. Although they've done their best to scare you out of this system."

"I'd say they've succeeded pretty well."

Dearhorn was suddenly grave. "In an all-out war with Saturn you would win eventually. You would suffer some severe setbacks at first but in the end you would win."

Dale smiled at Dearhorn's use of the word *you*. Unconsciously he had identified himself with the Saturnians.

"I fail to see that we have such a marked advantage," Dale remarked. "I should say that technologically the Saturnians are far ahead of us."

Dearhorn shook his head.

"Five hundred years ago there would not have been the slightest doubt as to the outcome. The Saturnians would have won without a struggle. A hundred years ago I believe they would have won. But today—I don't know."

"But they must have incredible engineering skill. They got me up and down in that elevator as slick as you please. And the way they can neutralize radiant energy—" Dale threw up his hands in despair.



"The trouble is I'm afraid they'll never go any further."

"Well, you know them better than I do."

Dearborn bent over the table, emphasizing his remarks with his forefinger.

"The Saturnians are the victims of their own cleverness. A few centuries ago no one in the solar system could touch them. They knew all about gravitation and thermodynamics and even nuclear fission when you on the Earth were still fumbling around with Kepler's laws."

"As far ahead as that!"

"And then they stopped. They were so infatuated by their own cleverness that they forgot about basic science and concentrated entirely on developing what they already knew. Everything had to have some practical value. Well, they put out some amazing devices, all right. You can coast a long way if you're going fast enough when you hit the bottom of the hill."

Dale took another sip of water.

"Why don't you stir them up?" he asked presently. "Get them to thinking along new lines? They still must have a big lead."

Dearborn's eyes flickered. "You think it's a good idea?"

"Why it's the chance of a lifetime," Dale told him. "You know these creatures. You have their confidence. Under your leadership they could become the dominating force in the solar system."

"It's quite possible."

"Seems like a shame for them to go on drifting this way. I'll warn you we're coming along fast on Earth. In another fifty years we may have the advantage."

"Who cares?"

Dale regarded him incredulously. "But you can't just go on stagnating."

"Come here."

Dearborn strolled over to a table in one corner of the room on which reposed seven large metal-bound volumes supported by heavy stone book ends.

"These volumes contain the history of Saturn up to about a thousand years before my venturesome grand-sire appeared on the scene. I estimate it will take another twenty years to finish the series."

He opened one of the volumes and began turning the leaves gently, almost tenderly.

"This volume goes back ten thousand years, ten thousand Saturnian years, of course. Unquestionably it was the hardest of all to write. I spent seven years on this volume alone."

Dale inspected the pages curiously. It had never occurred to him before that Saturn had a history.

"What's this?" he remarked, examining a paragraph at the top of a page. "It mentions an invasion here."

Dearborn smiled indulgently.

"My dear boy, you don't suppose you were the first people ever to invade this planet, do you? Saturn was invaded thousands of years ago when people like you thought the Earth was the center of the universe and that the moon and planets revolved around it in crystal spheres."

"But where did they come from?"

"You don't even know it yet, but there is a planet about five times as massive as the Earth revolving around the sun at a distance of sixty astronomical units in a period of four hundred sixty-five years. I

have named this planet Anteros. I have reasons for believing that all life in the solar system originated upon Anteros. This planet was complete when Mars and the Earth were hardly more than protoplanets. Its inhabitants had reached a high degree of culture when the craters on the moon were in the process of formation, probably long before the *Mare Imbrium* planetesimal. Thousands of years ago men from Anteros sent their fleets throughout the solar system exploring and colonizing. Saturn, because of its ring, was naturally an object of interest."

He replaced the volume upon the table and stood looking at it fondly.

"My hardest task has been finding reliable recorders. I've had to interview thousands in an effort to find a few whose minds still retain an authentic trace of time back to the Anteros invasion. I've taken enough notes to fill a hundred volumes."

"Let me get this straight," Dale interrupted. "Do you mean to tell me this history is all based upon personal interviews?"

"It's the only written history of Saturn in existence."

"You mean you had to start from scratch?"

Dearborn nodded, unable to conceal his pride.

"Did it ever strike you as curious that upon the Earth man is the only animal that attempts to preserve a record of its activities? Even the ant—probably the most intelligent creature next to man—seems only concerned with the present. An ant has no interest whatever in the battle its ancestors had ten years ago with the termites next door."

"Can't say I ever thought much about it," Dale admitted.

"The Saturnians have no literature whatever. They never heard of a book till we came here. All their knowledge, their whole cultural background, is locked up in their minds. Everything they know is passed on by word of mouth from one generation to the next. Fortunately they have remarkably retentive memories and they live a long time. I have several well-authenticated records of individuals who have attained an age exceeding two hundred."

"Future historians will owe you a debt of gratitude."

Dearborn shrugged indifferently. "I really haven't given the matter much thought."

"It's all very well, but what's the point of it?" Dale exclaimed impatiently. "Where does it get you? You say a Saturnian never looks at a book. And you'll probably be gone before your work is recognized on Earth."

"I'm not so sure there is any point to it," Dearborn replied serenely. "I began this history when I was a young man to pass the time, to amuse myself. I traced the rise and fall of dynasties. Men who lived thousands of years ago became more real to me than my everyday companions. Eventually it became the most important thing in my life."

"But wouldn't you rather make history than write it?" Dale demanded. "As you say yourself, the Saturnians have stopped us now but they can't stop us forever. We men of the Earth are made that way. We have a drive that never lets us stop. And in the end we'll conquer this place."

There was only quiet amusement in Dearborn's eyes.

"You forget how many times Saturn has gone through this before. There have been moments of

feverish activity interspersed with long periods of torpor when time seemed virtually to stop. We are in one of those periods now . . . perhaps near the end of it. It is possible that the Saturnians might be stirred to action again by some young energetic leader—a man like yourself, for instance."

Dale flushed. Dearborn had read his thoughts with uncanny accuracy.

"Can't say I feel much like a conquering hero," Dale muttered. "Everything has gone to smash. We're held here as prisoners completely helpless. Even the base we worked so hard to establish on Titan is gone. Say, maybe you know . . . what was it happened to Titan anyhow?"

"Titan?" Dearborn's expression was genuinely puzzled for a moment. Then he laughed regretfully. "Unfortunate incident, wasn't it? Ever hear of Themis?"

"Themis?" Dale repeated thoughtfully. "Seems to me that was a satellite of Saturn that an astronomer named Pickering thought he discovered way back at the start of the twentieth century. But nobody else could find it, so Themis never was accepted as an official member of Saturn's family."

"Themis is a member of the Saturnian system all right. Or rather it *was*, for Themis no longer exists. Themis was the unlucky body that collided with Titan."

"But the satellites of Saturn revolve in nearly circular orbits," Dale objected. "They never cross one another's path."

"All except Themis," Dearborn acknowledged. "Un-

like all the others, Themis moves in an oval path that stretches out beyond the orbit of Hyperion at one end, to inside the orbit of Titan at the other."

"Sounds as if it couldn't be one of the charter members of the family."

"Probably a captured asteroid," Dearborn agreed. He sighed. "In any case, its career is ended now. Henceforth, Titan and Themis will revolve around Saturn together as one body." \*

"And to think I said once that nothing would ever happen again in the Saturnian system," Dale said ruefully.

"Pickering even foresaw the possibility of a collision between Themis and Titan someday," Dearborn remarked. "You'll find it discussed among his papers in the publications of the Harvard College Observatory."

Dale struggled to conceal his growing impatience.

"That's all very interesting but it still doesn't solve our problem. How are we going to escape from this haunted palace?"

"Is it so bad?" Dearborn inquired casually. "You've been treated well enough, haven't you?"

"You've been here all your life," Dale cried bitterly. "You don't know anything else. But it's different with us. We've either got to escape or die trying."

Dearborn frowned slightly.

"I'm afraid I really can't do as much as you think. The Saturnians allow me considerable freedom and even come to me for advice at times. But on the whole I'm a good deal like those apparently useless creatures certain insects kept in their nests for pets."

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\* As a result of the collision the period of Titan was shortened by 2.37 days.

"I don't intend to become anybody's pet," Dale declared indignantly.

"It's not such a bad life."

Dale turned on him fiercely.

"You've got to help us. You've led this sheltered hot-house existence so long you don't know what it means to be out in the open air fighting like a man. Your grandfather was a fighter. Or had you forgotten?"

Dearborn raised one hand wearily. "There's no use taking that line with me," he said calmly. "I don't care a snap of my fingers what you think of me or what your friends think of me, although I'm not so indifferent to your welfare as you probably suppose.

"The study of history has changed my point of view entirely," he continued, speaking more to himself than to Dale. "To me there is no longer a past or a future but only the present. I can't distinguish between events that happened ten thousand years ago and events happening today."

Dale was about to interrupt but Dearborn hurried on.

"Why should I care what happens to you or what you think of me? Don't you realize you are nothing but the merest incident in this planet's history? Do I care for the opinion of a man who lived ages ago? You see, you aren't real to me at all. So far as I am concerned you might as well be one of the ancient invaders from Anteros."

Dale did not reply but sat studying Dearborn intently as if he were seeing him for the first time. Dearborn bent over the table, fixing Dale with his eye.

"Now let's get down to facts. The council before which you appeared will take your case under con-

sideration. Regardless of my personal feelings I'll exert myself to the utmost in your behalf. The decision of the council will be forwarded to me. I'll let you know their decision the minute I know myself."

"What do you think they'll do to us?"

"Not much of anything probably. Just keep you in custody like ourselves, I expect. They're rather predisposed in your favor." There was the barest hint of a smile in Dearborn's eyes. "You see you came here peacefully—didn't try to injure anyone."

"We never had a chance to defend ourselves," Dale retorted. "We hadn't been here ten hours till all our firearms were stolen—"

He broke off abruptly, glaring at Dearborn suspiciously. "Were you . . ."

Dearborn waved one hand languidly. "I might have had something to do with it."

"All right—then you *did* get us into this. Now you can help get us out."

Dearborn sighed. "As I said, there's really nothing I can do till the council makes its decision."

"How long will that be?"

"Hard to tell. A few days . . . a week . . . perhaps a month."

"And in the meantime we've got to sit around while these amphibians make up their minds about us!"

"You may find the time will pass more quickly than you suppose. There are some extremely interesting sights to see here. Also you will have a wonderful opportunity to meditate—to get acquainted with yourself. I'm sure the Saturnians will make you quite comfortable. They're really very kindly creatures."

"Let me tell you something"—Dale's eyes were



blazing—"I'd advise you to keep clear of the men in our outfit. If they ever find out you suggested stealing those arms there's going to be trouble."

"Also let me give you some advice," Dearborn said, dropping his bantering tone and speaking very earnestly. "Please be patient. I feel confident everything will work out satisfactorily in the end."

There was a creaking of hinges and the sound of footsteps from behind. Dale started slightly as Lancelot entered the room. Dale had just been wishing Lancelot would show up so he would have an excuse to leave, and here he was.

"Well, I guess I've got to go now. Here's Lancelot."

"Who?"

"Lancelot, my keeper. He reminds me of a salamander I had when I was a kid. Name of Lancelot."

Dearborn laughed heartily.

"You mean old—" He uttered some word that sounded as if it consisted chiefly of letters at the end of the alphabet. "He's a fine chap. Perfectly harmless. I've known him for thirty years. One of my best recorders incidentally."

As Dale started for the door Dearborn seized him suddenly by the hand. "Think whatever you like of me, only remember what I've told you. Don't do anything rash."

Dale nodded curtly.

"Good-by."

He turned and followed Lancelot through the door.

## Chapter 19 *The Arms*

DALE accompanied Lancelot down the hall, outwardly meek but inwardly seething. He resented Dearborn's interference in their affairs and it galled him to be at the mercy of these repulsive creatures. He regarded Lancelot with particular distaste. Only the thought of his enormous strength prevented him from striking a blow for freedom then and there.

The quarters in which the crew were lodged proved to be only a few hundred yards from Dearborn's apartments. Lancelot opened the hatch and stood happily while Dale entered. The moment the lock closed behind him, Dale was surrounded by the crew, who demanded to know everything that had happened since his departure into the lower regions.

"So Dearborn was the man you saw at the window that night on Rhea?" Fleming mused.

"Evidently he was keeping us under observation from the very first," Dale said. "I also think it was Dearborn who gave Chuck his big scare in the bunk room."

"What were they doin' in there anyhow?" Chuck asked.

"There's no question but that they were after our arms and ammunition. I don't know exactly why, but Dearborn seemed to think we'd fare better without them."

"He sure took a lot of interest in our affairs," Chuck grumbled.

"Remember these people have lived here all their

lives," Dale told them. "They're more like Saturnians than human beings any more."

"Ugh!"

Several of the men turned away in disgust. It was plain they had little sympathy with anyone who could be on friendly terms with their captors.

Dale's eyes were thoughtful.

"Some of Dearborn's remarks sounded so queer I couldn't help wondering if he's altogether sane. Although in other respects he seemed rational enough."

"What's he going to do about getting us out of here?" Taggart demanded.

"He says there's nothing anyone can do till the council reaches a decision. Until then he advises us to be patient."

"Patient!" Taggart snorted. "He tells us to be patient while we're penned up on this frog farm. If you ask me I think he's trying to work some angle of his own."

Dale shook his head. "He seems completely absorbed in this history he's writing."

Taggart laughed derisively. "Wait till you've been kicked around like me. You'll find everybody's got some angle he's workin' on."

The men were slumped around the room, their attitudes dejected. The feeling of optimism which Dale's story had at first aroused was rapidly evaporating.

Dale shrugged helplessly. "Seems to me we've got to trust Dearborn. What else can we do?"

MacAllister leaned back against the wall, hands clasped behind his head.

"Why don't we play along with the Saturnians the way Dearborn says? Act real nice and patient. But while we're bein' patient we'll keep our eyes open.

You never can tell, we might run onto something real useful."

"Such as what?" Taggert grunted.

"Well, it's just possible, just barely possible we might run into those rifles that got stolen."

Taggert's jaw dropped. "Say, that's right. They've got to be somewhere."

"Sure they have," Chuck agreed. "They're probably not more'n a thousand miles from here."

"I got a powerful hunch those rifles are right close somewhere," MacAllister declared calmly.

"What makes you so sure?" Fleming inquired.

"Because, if Dearborn and his cohorts are the ones that pinched 'em, it stands to reason he'd hide 'em around close where he could keep an eye on 'em." MacAllister surveyed the room critically. "I also got a powerful hunch if we get hold of those rifles we can get out of here. I've got out of places that looked a lot worse than this."

"Why didn't you think of that before we got in?" Chuck inquired.

"Well, because I didn't know quite so much about the Saturnians as I know now. They've got a few cute tricks all right but that about lets 'em out. Now you take this character just come in with Dale—"

"You mean Lancelot?" Dale asked.

"Huh?"

"I named him Lancelot," Dale replied briefly.

"Now you take this Lancelot," MacAllister continued. "He don't look like he's got such a high IQ to me. Suppose him and Dale got to be pals after awhile. They nose around a bit. You can't tell what they might uncover. See what I mean?"

"I'd rather die," Dale groaned.

"You may have to if we can't get back to the *Albatross*," MacAllister informed him cheerfully.

Dale awoke after their sleeping period feeling almost as tired as when he dozed off six hours earlier. Breakfast consisted of some watery plants which the Saturnians had deposited in a heap by the door. He ate them without relish, fully expecting to be violently ill afterward, and was rather disappointed when no untoward symptoms developed. The men were in a sullen, depressed state of mind. They held a council of war in which it was decided to explore every possible means of escape while awaiting release. If there was no prospect of obtaining their freedom otherwise, they resolved to take it regardless of consequences. Any fate seemed preferable to existence underground in their present gloomy surroundings. Each man was assigned a definite task. Dale was to cultivate Lancelot's acquaintance and through him endeavor to explore the passageways nearby in the hope of finding the stolen arms and ammunition.

Friendship with the Saturnian blossomed slowly. The trouble was there were so few regions in which Lancelot was mentally accessible. In many respects he seemed no farther advanced than the toads and newts and salamanders which he resembled. Yet in other ways Dale was sometimes aware of a consciousness so far exceeding his own as to make him tremble. Lancelot had an uncanny instinct for knowing precisely when Dale desired his company, and his ability to discern objects at a distance through dense obscurity practically amounted to radar. Dale recalled that some of the lower vertebrates, particularly certain

reptiles such as the Tuatara lizard of New Zealand, possess an organ in the brain known as the pineal body,\* which exhibits traces of having once functioned as a third eye. If all life in the solar system originated on Anteros as Dearborn believed, was it not conceivable that this third eye, which was of only a rudimentary character in terrestrial amphibia, might be of enormous perceptive power in the Saturnia?

The feature about the Saturnians which astonished Dale the most was their extraordinary ability to adjust themselves to pressure. In his journey to the council he had seen the creatures frolicking under a pressure of probably a thousand atmospheres, while they were equally at ease under near-vacuum conditions on Titan. In this regard the Saturnians resembled the mythical salamanders which were supposed to be at home either in fire or water.

After many hours in Lancelot's company Dale had learned next to nothing that would be of help in aiding them to escape. On the other hand he had learned a good deal about Lancelot's attitude toward himself. The creature liked him. In fact, Lancelot had developed a sort of shy fondness toward him that was distinctly embarrassing at times. He performed innumerable little acts of kindness for Dale in the same way that one pampers a favored pet. Instead of being pleased or grateful Dale found these attentions decidedly irritating. He started to shrink at the approach of the hulking monster and longed for the day when he would be free of him forever. Only the hope that

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\* The pineal also appears in man as a small structure attached to the upper surface of the brain.

the creature might be useful in effecting their release enabled Dale to endure his presence.

The men grew increasingly restless under the long hours of enforced idleness. At first, some were inclined to take Dearborn's advice and wait patiently for the decision of the council, but as time dragged on and no word was forthcoming, a feeling of fierce antagonism developed toward their captors which nothing could restrain. Not that they were abused or closely confined. Quite the contrary. The attitude of the Saturnians was similar to that of a kindly farmer toward his chickens. They were well fed and even free to roam up and down the passageways for exercise as long as they kept clear of the "fence" at the end of the tunnel. The fence in this case was simply the narrow mouth of the tunnel guarded by three alert Saturnians. Freedom lay outside the fence. The men could see the open landscape beyond, with the rockets still standing as they had left them. But there was no getting past those guards.

One member of the crew—a confirmed gate-crasher back home—had devised a scheme which looked fairly hopeful at first. He maintained that they were making the matter of escape entirely too difficult. To get past the guards, it was necessary only to apply the same technique which he had used so successfully at stadiums and ticket offices on the Earth. One strode up to the gate with a brisk, businesslike air, nodded pleasantly to the attendant and expressed surprised indignation if asked for a ticket. He found that it had worked more than half the time on ushers and guards, and he was confident it would prove equally effective on the Saturnians. All you needed was confidence.

All went well until he was within a few feet of the opening, when his legs suddenly buckled under him and he collapsed limply in one of the Saturnian's arms. Only one fact of value emerged from the experience. The men were then convinced, as Dale had originally believed, that the radiation-damping process, which was the Saturnians' chief weapon of offense, was effective only over a limited range. Beyond a distance of approximately a hundred feet, one felt no effects at all, or merely mild mental confusion.

"Any word from Dearborn?" Dale was asked after a wearisome session in Lancelot's company.

"He's still hopeful," Dale answered, throwing himself on the floor. "He says the council has met and we can expect a decision at any time."

"That's what he said a week ago."

"He seemed more optimistic now."

Taggart called down maledictions upon Dearborn and the Saturnians alike.

"To think I'd ever have to sit around waiting for a bunch of overgrown tree toads to make up their minds," he roared.

"Haven't you got a single clue about those guns yet?" MacAllister asked. "You and your pal have snooped around this place enough."

"The trouble is I can't do much without arousing his suspicion," Dale explained. "He takes me places he thinks I'd like to see, but which aren't the slightest help as far as escaping is concerned."

"Well, tell the big boob to get a move on."

"I've got a scheme I'm going to try next time," Dale told them. "It's only a hunch, but it's barely possible it might work."



When Dale awoke next sleeping period he found Lancelot waiting outside the door with some choice bits of food for his breakfast. Dale ate with as much enthusiasm as he could assume while Lancelot looked on with delight. After breakfast, the Saturnian started down a passageway leading to a cave containing some exceptionally beautiful calcite crystals, but instead of following willingly as before, Dale frowned and shook his head. Lancelot stood stock-still regarding him dolefully out of protruding black eyes. Dale pointed toward Dearborn's apartment, then raised his hands and squinted over one thumb as if aiming a rifle. Lancelot pointed to the crystal cave but Dale frowned and shook his head more vigorously than before. Again he pointed to Dearborn's apartment and imitated a man with a gun. Still Lancelot regarded him blankly. Dale did everything that can be done with a gun. At length he drew an outline of a rifle on the cavern wall. Suddenly Lancelot teetered excitedly up and down and pointed toward Dearborn's apartment. Dale followed him rather warily, uncertain what the creature had in mind. The Saturnian led him to Dearborn's quarters but instead of entering, as Dale anticipated, he hurried on past and turned into a dark, narrow corridor which they had never explored before. After many twistings and turnings Lancelot stopped in an open space and pointed proudly to some objects leaning against the wall. Dale knelt beside them. Exactly as he had hoped! There were the guns neatly stacked in a row with the boxes of ammunition still sealed beside them.

Dale ran his fingers over Lancelot's neck and shoulders in a gesture of thanks. The creature's thick

lips peeled back while it gazed at him fondly through half-closed eyes. Now that Dale had found the weapons he was on fire to be rid of the creature and break the good news to the crew. Never had Lancelot clung to him so tenaciously. It was a full hour before Dale was finally able to tear himself free. He entered their quarters with his usual downcast air but the moment Lancelot was gone he held up his arms in triumph.

"I've found the guns!"

For an instant the men gazed at him too stunned to speak. Then they crowded around him excitedly.

"Well, where are they?"

"They're hidden down a passageway not twenty minutes from here. I've marked the way."

"How did you find them?"

"Lancelot showed them to me."

"He *showed* them to you!"

Dale doubled up with laughter.

"It was just as I suspected. Lancelot was evidently a member of the party that raided our quarters that night. He helped steal the guns and take them back to Saturn."

"Then let's get them quick!" MacAllister cried. "He'll go to Dearborn and tell—"

"I don't think so."

"I wouldn't trust one of them guppies."

Dale shook his head.

"I'm quite sure Lancelot never saw a gun before and hasn't the haziest notion what you do with one."

## Chapter 20 *Escape*

A VIOLENT argument broke out at once. Most of the men were for seizing the arms immediately. They were sick of waiting. With freedom in sight delay was intolerable. After a violent discussion which at times threatened to develop into a battle royal, it was agreed to wait a few hours until Dearborn and his companions were asleep. As there was no day or night in their underground abode, each group had different hours for eating, rising, and retiring. Thus it happened that Dearborn's group was going to bed at about the time the crew was eating lunch.

As the zero hour approached the tension became almost unbearable. Taggart sat, watch in hand, counting off the minutes. At length he shoved the chronometer aside and jumped to his feet.

"How's the hall?"

"All clear," MacAllister whispered.

"Outside, everybody," Taggart ordered.

The men slipped into the passageway in their space-suits with Dale and Taggart at their head. Dale could not resist the feeling that the whole venture was make-believe. That he was a freshman back at the Academy faring forth on some student escapade. There might be a scuffle with some upperclassmen later on, but it was all in fun and nobody would be really hurt. Perhaps it was best to go on thinking it was make-believe. It would help to still the racing of his heart and the tightness in his stomach.

As they approached the corridor leading to Dear-

born's apartment, Dale held up his hand, waving the others back.

"What's the matter?" Taggert asked.

"Just caught sight of three Saturnians going into Dearborn's place," Dale told him. "Something's up."

"We've come this far," Taggert said impatiently, "we can't stop now."

"And lose the only chance we'll have of getting out of here?" MacAllister demanded. "Use your head."

"What do you want to do then?"

"Think," MacAllister retorted.

For the next couple of minutes they thought hard.

"Suppose just a few of us go ahead as if we were out for exercise," Dale proposed. "We can bring the guns back to our place and distribute them there."

"How many men will it take?" said MacAllister.

"About three is all."

MacAllister nodded to Taggert and Collins. "You two go with Sutton. See you later."

MacAllister and the others returned to their quarters while Dale sauntered on with Taggert and Collins. They often went for walks up and down the hall so that the presence of a few of them together would not arouse suspicion. Bringing the arms back would be another matter. They would have to make a dash for it and trust to luck.

As they passed Dearborn's apartment the sound of voices was plainly audible through the wall. Dearborn seemed to be doing most of the talking, the Saturnians breaking in with an occasional question. Several times Dale thought he recognized Lancelot's guttural accents.

They forced themselves to walk slowly until they

were safely past the door, then Dale broke into a run with Taggart and Collins at his heels. He hesitated at a fork in the tunnel. There were three branches. Now which one was it?

"Look for an arrow pointing along one of these walls," he told them.

They spent a bad quarter of an hour vainly searching the walls. Just when they were about to give up in despair Collins grabbed Dale's arm.

"What's this?" he cried.

Dale peered over his shoulder. "That's it! That's it!"

"Which way now?" Taggart demanded.

"Straight ahead down this central corridor. The guns should be in an alcove on your right."

They hurried on as fast as the narrow walls of the fissure would permit. Would the arms still be there? Dale wondered. The desire to find them had developed into an obsession. It began to seem impossible that they would ever actually possess them. Everything else on Saturn had proven to be a trick and a snare. His fears were dispelled by a whoop from Taggart. They found him on his knees with three of the rifles clutched in his arms.

"Good as new!" he exulted, climbing to his feet. "Now to get this stuff back to the crew."

"Glad we don't have to go more than a mile," Collins grunted, bending under his load. "These things are heavy."

"If we can only get by Dearborn's place," Dale fretted. "I've a hunch there's something brewing there."

"Maybe he was just checkin' up on his history," Taggart said. "You fellows ready?"

"Go on ahead," Dale told him. "Collins and I will trail behind."

By the time they reached Dearborn's apartment Dale felt as if his arms were ready to break. The sound of voices was still audible—louder than before.

"The meeting must be breaking up," Collins gasped, struggling to keep his grip on the guns. "Maybe we'd better go hide."

"Not on your life," Taggart growled. "I've got one of these guns loaded. Nobody's going to stop me now."

Dale and Taggart were already past the door when they were halted by a crash from behind. Collins, an agonized expression on his face, was stretched on the floor with rifles all around him.

"Couldn't hold 'em any longer," he groaned. "Guess I'm not as strong as you fellows."

"Give me some of those," Taggart snapped. "Dale, you take the rest. Now run for your lives."

There was an ominous silence from the other side of the wall. They gathered up the rifles and raced on down the corridor. Inside their quarters MaeAllister leaped around them emitting glad yelps like a terrier puppy. The men stood gaping at the weapons as if unable to believe their eyes.

"Grab a gun, everybody," Taggart yelled. "This is it!"

A few minutes later the men were outside marching down the hall with grim, determined steps. A few yards more and they would meet the guards at the entrance. Dale gripped his rifle tighter. That would be the first—perhaps the only—test. In every encounter so far they had been vanquished without a struggle.

This time the outcome might be different. At least they had a fighting chance.

The guards stood at the entrance and watched the approaching men, their smiles bland as usual. Suddenly Dale was seized by despair. What chance did they have against these creatures with thousands of years of experience behind them? Why antagonize them? Better yield while they were still kindly disposed.

He began to feel it. The first tingling numbness of the radiation-damping device. What an insidious weapon it was! He felt himself slipping . . . growing limp . . .

As from afar, he heard the sound of shots.

Dale shook his head trying to bring thoughts back into focus. Something stupendous had happened. He glanced around wildly. The guards lay slumped on the ground. They had fallen at the first attack. It had been almost too easy!

Someone seized Dale from behind and propelled him outside. His head was clearing rapidly. Victory was like a dash of cold water. How wonderful it was to be free again. And there was the *Albatross* not a quarter of a mile away poised and ready for flight.

The men rushed for the ship, heedless of the sharp rocks around that could have ripped their suits open like a carving knife. They were within a hundred yards of the rocket when MacAllister, who was in the lead, raised a warning hand.

"Keep back. There're some guards down there."

Taggart scowled darkly. "We'll make short work of them."

"They're down where they're protected. We can't get at 'em till we're less than twenty feet away. Then they'll make short work of us."

"We'll creep up on 'em. Rush 'em."

MacAllister shook his head. "There ought to be a better way. Now let me look 'em over."

He took a pair of binoculars from a case at his side and trained them on the figures by the ship.

"Say, that one in front looks like that pal of Dale's. What's his name—Lancelot?" He passed the binoculars to Dale. "Here, take a look."

Dale scrutinized the Saturnians grouped about the spaceship. "That's Lancelot all right," he murmured.

"So it's Lancelot," MacAllister mused. "Now let's see. There ought to be something we can do about that."

He was silent for a moment while he bent the full force of his intellect upon the problem.

"Got it!" he exclaimed suddenly. "Suppose we try to go down there. Lancelot turns on the shock ray. Lays us out. That's the end of us. Now if Dale goes down alone, what'll happen? Why the chances are there won't be anything happen. Lancelot greets him like a long-lost brother. Dale plugs him real quick, sprays the others with his automatic—and zip. We're in!"

Taggart regarded the little man with open admiration.

"Mac, I always said you got a great head on your shoulders." He turned to Dale. "How about it, kid?"

Dale had been staring hard at the spaceship.

"It's a good idea," he said slowly.

"It's a swell idea!"



MacAllister was watching him narrowly. "Question is . . . are you game?"

"Of course he's game!" Taggert roared. "Who says he isn't game?"

While he stood hesitating there was a commotion from behind.

"There's somebody coming!" MacAllister yelled.

"It's Dearborn with a hunch of Saturnians!" Chuck screamed.

Taggert seized Dale by the shoulder. "Are you goin' or not?" he demanded.

Dale started down the incline, picking his way carefully over the treacherous boulders. When he entered the open space around the rocket, Lancelot regarded him amiably, without surprise or animosity as the Saturnians regarded everyone. Dale wondered if the creature would recognize him as usual. Sure enough, Lancelot came ambling toward him eagerly. Dale waited till he was within pointblank range. Then he raised his rifle and fired. An instant later he felt the paralyzing impact of the shock ray . . .

When Dale recovered he found Dearborn studying him quizzically from out of his old-fashioned wide-view helmet. Dale struggled hastily to his feet. There was bustle and confusion all around. The men were swarming up the side of the ship to the personnel sphere. Several Saturnians lay scattered about the landing supports. Dale stumbled over to the place where Lancelot had fallen.

"Too bad," Dearborn murmured, prodding Lancelot with the toe of his boot. "He had one of the best memories of anybody on my staff. I'll have a hard time finding a replacement."

"That's too bad," Dale said.

"The council just voted your release. You were free to leave whenever you liked."

He stood with his hands on his hips gazing overhead at the towering framework of the *Albatross*.

"The Saturnians may not be so friendly next time," he remarked. "They're a peaceful lot. They don't like all this violence and shooting. One reason I was so anxious to get hold of those firearms. Stop trouble before it started was my idea."

He sighed and gazed down at Lancelot. Suddenly his face lighted up. "I've just finished the eighth volume of the history. By the time you return I should be through with number nine."

"By the time I return?" Dale said vacantly.

"Hey, Sutton," a voice bellowed from above, "can you get up here? We're pulling out in a minute."

Dearborn waved his hand at the volcano glowing dimly through the drifting mist. "How can you ever leave it?" he exclaimed rapturously. "Where can you find another world to match it?"

"Maybe someday I will return," Dale told him. "Maybe someday I'll own this place and Uranus and Neptune and Anteros, too."

Already he could feel the ship stirring with life as he hurried up the catwalk.

## Backstage on Saturn

WHEN the editors asked me to write a book about life on Saturn, my first impulse was to throw up my hands in utter despair. The reason is obvious. Of the twenty-two bodies in the solar system large enough to be worth mentioning, Mars is the only one besides the Earth which shows the slightest evidence of life upon its surface. In fact, Mars and the moon are the only bodies whose surfaces we know anything about at all. Conditions below the cloud layer of Venus are largely a matter of conjecture; and while conditions on Mercury and the great satellites are probably similar to those on the moon, still we do not know. If we are in doubt about conditions on the terrestrial planets, we are practically floundering around in the fourth dimension when we come to the giant or Jovian planets. And when it comes to talking about life on such bodies . . . Well, it makes you want to tackle something easy like coaching a football team.

Then by chance I ran across a book on Saturn by a well-known English astronomer of the last century, Richard A. Proctor,\* who devotes an entire chapter to the Habitability of Saturn. He starts this chapter with the blithe assertion that "when we consider the analogy with our own planet, it seems impossible to doubt that Saturn is inhabited by living creatures of

\* *Saturn and Its System*, Longman, Green, Longman, Roberts, & Green. London, 1865.

some sort." I decided that if Mr. Proctor was so sure about it, I could go a little further and give these inhabitants definite form and personality. It seemed to me they would have to be organisms which could adapt themselves to a wide range of temperature and pressure. From this point of view, the salamander seemed rather attractive, owing to the old legend that it was capable of existing both in fire and water. Moreover, I always had had a fondness for these harmless little creatures ever since I used to play with them along the edge of a lake when I was a boy, as Dale did. Their mouth turns up at the corners, giving them a friendly, amiable expression. And if you stand a salamander on his tail it does bear some resemblance to a man with his legs and arms spread out.

When we think about conditions on Saturn, we do know a little about its outer atmosphere, but as soon as we delve a few miles below the surface we are lost. As a matter of fact, it has only been since about 1925 that we have known anything about the giant planets at all. As late as 1915 Jupiter was thought to have such a high temperature that it was often pictured as a sort of second sun. (Jupiter and Saturn are probably so similar in constitution that we can consider them as one.) Then the temperature of their surface was actually measured, and instead of being red-hot as supposed, it was found to be down around  $-280^{\circ}$  F, which is far colder than dry ice. It seems incredible now that the best astronomical thought could be so wrong.

It has only been since 1932 that we have a definite knowledge of the gases composing the atmosphere

of Jupiter and Saturn. We know that these contain methane and ammonia, two common chemical compounds found upon the Earth. Methane is a compound of carbon and hydrogen which occurs naturally in swampy regions from the decay of vegetation. Ammonia is a compound of nitrogen and hydrogen familiar to everyone from its pungent odor, and widely used in cleaning fluids and as a refrigerant.

But probably the most plentiful gases in the atmosphere of Jupiter and Saturn are hydrogen and helium. It is generally believed that the planets originated in some way from the sun; possibly from a vast flat cloud of gas that once extended around the sun out over the region in which the planets now revolve. If this cloud consisted of the same material as the sun and stars, then it must have been mostly hydrogen and helium, since these two lightest elements are by far the most abundant in the universe. In the course of time certain condensations developed in the cloud, one for each of the present planets. By the time the small planets near the sun were completed they would have lost most of their hydrogen and helium by evaporation. But the giant planets, by their greater gravitational attraction as well as their low temperature, would have been able to retain a considerable portion of hydrogen and helium. Thus some astronomers estimate that Saturn may consist of as much as 60 per cent hydrogen.

How might a planet like Saturn look if we could cut it open? There is still considerable difference of opinion on the subject, but most authorities agree it would consist of three distinct regions. That is, the

planet, instead of being the same all the way through like an apple, would bear more resemblance to an avocado. The thin skin of the avocado would correspond to the outer atmospheric shell of the planet. Until recently it had been supposed that Jupiter and Saturn had atmospheres possibly ten thousand miles deep, but current thought on the subject tends to make them much thinner. In the case of Jupiter at least, it is hard to see how its atmosphere could be more than a few hundred miles in depth, and still bear any resemblance to what we would call an "atmosphere." The pressure increases so fast that it would seem more like an ocean than a gas.

The soft edible portion of the avocado corresponds to the solid mantle of Saturn, which consists probably of ice and solid hydrogen, and may be as much as ten thousand miles in thickness. Inside this mantle, corresponding to the avocado seed, is the dense central core of the planet composed of metals like iron or possibly *metallic hydrogen*. On the Earth, we are used to thinking of hydrogen as a thin invisible gas, but within Jupiter and Saturn the pressure is so great that the hydrogen would be compressed to a solid. And near the center, the solid hydrogen may undergo another change under pressure, and be transformed into a metal. Although metallic hydrogen has never been created in the laboratory, we are able to predict how it would behave from the theory of the atom.

Not all hydrogen is identical in structure. Some hydrogen atoms are twice as heavy as their companions. This heavy form of hydrogen is called *deuterium*. In normal rain water there is about one

deuterium atom present for every 5000 hydrogen atoms. By various processes it is possible to increase the concentration of deuterium until we get a liquid which, instead of being ordinary  $H_2O$ , is almost all deuterium or "heavy water." I have assumed that there are springs on Saturn which contain a high percentage of heavy water—enough to make a man very ill, as it did Dale. I have been unable to discover whether anyone has ever inbibed heavy water in large quantities but it is known to have a harmful effect on the lower animals, so that it seems reasonable to suppose a man would suffer likewise.

Besides wanting to people Saturn with intelligent beings, the editors also casually proposed that these creatures have a means of paralyzing all electrical communications in their neighborhood, including human brain waves. I have not the slightest idea how one would proceed to paralyze all electrical communications including human brain waves. The best method I could think of was simply to alter the properties of space over a limited region so that it would no longer transmit radiant energy such as light, heat, radio waves, X-rays, etc.

An analogous situation occurs when earthquake waves encounter the central core of the earth. Waves produced by an earthquake are of two types. There are Primary waves, in which the particles vibrate in the same direction in which the wave is moving. There are also Secondary waves, in which the particles vibrate in a direction perpendicular to the direction in which the wave is moving. One of the peculiarities of waves of this type is that they will not pass through a liquid.

Now it has been found that the Secondary waves *will not pass through the central core of the Earth*. Hence, it is concluded that despite the enormous pressure, the central core of the Earth is in a liquid condition since the Secondary waves cannot penetrate it.

And so I have endowed the Saturnians with an instrument which modifies space to such an extent that it has a discouraging effect upon any electromagnetic type of radiation trying to penetrate it. I am quite aware that such a remarkable instrument would doubtless produce other effects which I have neglected to mention. Please don't write in letters telling me about them as I've already had enough trouble with this part of the story.

The collision between Themis and Titan deserves brief mention.

On April 28, 1905 W. H. Pickering announced that he had discovered a tenth satellite of Saturn on photographs taken with the twenty-four-inch Bruce telescope at Arequipa, Peru. He named the satellite Themis. Themis moved in a remarkably elongated orbit, quite different from the other nine satellites of Saturn. Pickering pointed out that a collision between Themis and Titan was possible.

Now Themis has always been a nuisance to astronomers. Nobody was ever able to confirm Pickering's discovery. Apparently what he thought was a satellite was merely an asteroid or a defect on the plates. Yet because Themis is occasionally listed as one of the satellites of Saturn, people keep writing letters to astronomers wanting to know whether Saturn has nine satellites or ten. (In the story I have given



it eleven, assuming that two more will be discovered within the next century.)

This seemed like a golden opportunity to get rid of Themis forever by having it bump into Titan. And so I had the two collide, taking care to get my characters out of the way beforehand. Let's hope this is the last of a pesky little body that never had any existence except on paper.

P. L.